TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	1/λ −	
Ni . .	3	1	II.		7		5462·732	1·49	5·0	18300·9
Fe .	6	6	III.		1		5455·826	,,	,,	18324·0
.			II.		8		5455·759	,,	,,	18324·3
Fe ? .		3	III.		1		5455·666	,,	,,	18324·6
Fe* . .	7	7	I.	1	9*	5447·116	5447·130	,,	,,	18353·3*b*
Fe . .	5	6	I.	1	9	5434·725	5434·742	1·48	,,	18395·1*b*
Fe . .	5	7	I.		10		5424·284	,,	,,	18430·6
Va . .	3									
Va . ,	4	6	I.		12		5415·421	,,	,,	18460·8
Fe . .	4									
Cr . .	10r	5	I.		7		5410·000	,,	,,	18479·3
Fe . .	7	7	I.	1	14	5405·979	5405·987	,,	,,	18493·0*b*
Fe . .	7	7	I.	1	12	5397·319	5397·346	1·47	5·1	18522·5*b*
Fe . .	4	5	I.		11		5393·378	,,	,,	18536·2
Fe . .	3	4	I.		11		5389·683	,,	,,	18548·9
Fe . .	6	6	I.		11		5383·576	,,	,,	18569·9
Fe . .	2	3	I.		9		5379·776	,,	,,	18583·0
Fe-Cr † .	9, 2	7	IV.		8		5371·686	,,		18611·0
Ni .	2	2								
Fe . .	4	6	I.		8		5370·165	,,	,,	18616·3
Fe . .	4	6	I.		8		5367·670	,,	,,	18625·0
?	?	3	IV.		1		5363·056	1·46	,,	18641·0
Fe (Co)	1, 3	1	III.		5		5363·011	,,	,,	18641·1
?		2	III.		7		5361·813	,,	,,	18645·3
Fe-Ni .	3, 3	4	IV.		8		5353·592	,,	,,	18673 9
Th ‡. .	75		M.	2		5350·670		,,	,,	18684·1
Ca . .	7	5	M. III.	1	4	5349·599	5349·623	,,	,,	18687·8*b*
Fe ? . .	3	4	II.		9		5333·092	,,	,,	18745·7
Fe . .	9	8	I.		8		5324·373	1·45	,,	18776·4
Co ? . .	2	3	III.		1		5316·950	,,	,,	18802·7
[1474] .		6	III.		7		5316·870	,,	,,	18803·0
Fe ? . §		4	III.		1		5316·790	,,	,,	18803·2
Fe . .	3	4	I.		10		5307·546	,,	,,	18836·0
Cr . .	2	3	I.		9		5300·918	,,	5·2	18859·5
Cr . .	6r	4	I.		12		5296·873	,,	,,	18873·9
Fe . .	2	2	I.		12		5288·708	1·44	,,	18903·0
Fe . .	5	6	I.		11		5283·803	,,	,,	18920·6
Fe . .	4	5	I.		11		5281·968	,,	,,	18927·1
Co . .	3	1								
Cr . .	5	2	I.		11		5276·205	,,	,,	18947·8
?	?	2								
Fe .	3	3	I.		8		5273·554	,,	,,	18957·3
.	6		II.		5		5273·443	,,	,,	18957·7
Fe .	3	3	I.		6		5273·344	,,	,,	18958·1
Fe .	6	4	M. III.		3		5270·533	,,	,,	18968·2
[E_1] .			I.		12		5270·495	,,	,,	18968·3
Ca .	10	4	M. III.	2	3	5270·445	5270·448	,,	,,	18968·5*b*
E_2 Fe* .	8	8	I.	1	16	5269·714	5269·722	,,	,,	18971·1*b*

* A difficult double.

† The red component, a difficult double. ‡ A difficult triplet.

§ The 1474 lines is a triplet, or rather a double, the red component of which has a weak side-line to the violet; probably the violet component is due to iron, and the weak line to cobalt, but the red is unknown.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	$\frac{1}{\lambda}$−	
[Fe .	6	6	I.	1	8	5266·733	5266·729	1·44	5·2	18981·9*b*
Cr . (Ni ?) .	4r	2	III.		1		5265·884	”	”	18985·0
.		5	III.		2		5265·789	”	”	18985·3
Ca .	8	3	III.	1	2	5265·725	5265·727	”	”	18985·5*b*
Ca . .	6	3	M. III.	2	3	5264·408	5264·395	”	”	18990·3*b*
		6	I.		2		5264·371	”	”	18990·4
Cr . .	4r	3	III.		3		5264·327	”	”	18990·6
Ca . .	6	2	III.	2	5	5262·408	5262·391	”	”	18997·6*b*
? . .		1	M. IV.		1		5262·341	”	”	18997·7
Cr . Ca .	2 6	3	III.	1	12		5261·880	”	”	18999·4
Ca . .	2	1	M. IV.	1	5	5260·556	5260·557	”	”	19004·2*b*
Fe . .	2	3	I.		12		5253·649	”	”	19029·2
Fe . .	3	3	I.		11		5250·825	1·43	”	19039·4
Fe . .	2	2	I.		11		5250·391	”	”	19041·0
Fe . .	3	3	I.		10		5242·662	”	”	19069·1
Fe . .	7	8	I.		9		5233·124	”	”	19103·8
Fe . .	4	4	I.		8		5230·014	”	”	19115·2
Fe . .	2	2	I.		10		5225·690	”	”	19131·0
Fe . .	3	4	I.		10		5217·559	”	”	19160·8
Fe . .	3	4	I.		10		5215·352	”	”	19169·0
Ti . .	10r	3	M. I.	2	12	5210·549	5210·556	1·42	”	19186·6*b*
Fe . Cr .	3 8r	3 4	I.		10		5204·708	”	5·3	19208·1
Fe . ? . .	4 ?	3 2	I.		11		5202·483	”	”	19216·3
Fe . .	3	4	I.		10		5198·885	”	”	19229·6
Ti . .	8	3	M. I.	2	8	5193·134	5193·139	”	”	19250·9*b*
Ca . .			M. I.	1	3	5189·019	5189·020	”	”	19266·2*b*
.	6	4	I.		7		5188·948	”	”	19266·4
Ti . .	2	4	I.		3		5188·863	”	”	19266·7
[b_1]Mg .	40r	20	M. I.	2	11	5183·791	5183·792	”	”	19285·6*b*
Ti . .	10r	3	I.		11		5173·912	1·41	”	19322·4
[b_2]Mg .	35r	10	M. I.	2	9	5172·866	5172·871	”	”	19326·3*b*
Fe . .	5	5	I.		11		5171·783	”	”	19330·4
Fe .	3	4	I.		3		5169·218	”	”	19340·0
[b_3] .			I.		5		5169·161	”	”	19340·2
Fe .	3	4	I.		3		5169·066	”	”	19340·5
Fe .	6	6	M. IV.	2	3	5167·664	5167·686	”	”	19345·7*b*
[b_4] .			III.		7		5167·572	”	”	19346·1
Mg .	20r	8	M. IV.	2	3	5167·488	5167·501	”	”	19346·4*b*
Fe . .	2	2	I.		10		5165·588	”	”	19353·6
C* . .		1	M.	2	1	5165·241	5165·190	”	”	19354·9*a*
Fe . .	4	4	I.		13		5162·448	”	”	19365·4
Fe ? . .		2	I.		11		5159·240	”	”	19377·4
Ni . .	6	2	I.		10		5155·937	”	”	19389·8
Ti ? Co ? .		2	I.		10		5154·237	”	”	19396·2
Mn . Fe .	2 4	1 3	III.		9		5151·026	”	”	19408·3
? . Ni . .	? 5	3	I.		10		5146·664	”	”	19424·8

* In the arc the first line of the first head of the green carbon band.

INDEX OF SPECTRA

BY

W. MARSHALL WATTS

D.Sc. (Lond.) B.Sc. (Vict.) F.I.C.

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ERRATA AND ADDITIONS.

Index p. 2, column 2; *for* 4831, *read* 4931.

,, 2, column 1; *insert* 4663.

,, 16, column 5; *for* 3sc, *read* (4722·1) 10sc.

,, 23, *add* "Becquerel has observed an infra-red line at 10500."

,, 44, column 2, these lines are due to Magnesium.

,, 59, last line; *for* 6495·3, *read* 6496·3.

,, 99, column f; 3862·3 *should probably be* 3838.

,, 119, column c; *for* 6990, *read* 5990. Colonel Maitland has obtained the following numbers for the brighter lines:—6505, 6455, 6042, 6034, 6022, 5464, 5451, 5422, 5403, 5382, 5340, 5311, 5295, 5246, 4602, 4591.

,, 122, note; *for* 11020, *read* 11620.

,, 144, column c; *for* Thalén, *read* Hartley and Adeney,

,, 144, note; *add* "Becquerel has observed an infra-red line at 11500."

,, 148, note; "Becquerel has observed infra-red lines at 10830 and 11990.

,, 157, column e; the line 4679 is prominent in the arc.

,, 159, note; "Becquerel has observed infra-red lines at 11250 and 13060."

,, 166 and 178; The lines given for Calcium and Strontium Iodides are only calculated, not observed.

,, 175, column c; *add* "the triplet near M," 3730, 3724, 3720, *see also* p. 101; Liveing and Dewar, Proc. Roy. Soc. XLIV, 245.

,, 176, *add* "Samarium Oxide, Bettendorff, Lieb. Ann. 263, p. 164.

6410	6012	5650	5021	4810
6385 max.	6000max.	5605max.	4960max.	4755 max.
6372	5940	5562	4880	4594"

,, 212, column 2; 4347·1 is a Mercury line
column 6; 4077·3 should be 4078·3. 4077·3 is a Mercury line.

Appendix D, p. 9. The following lines are due to Lead:—4058·02, 4019 75, 3740·12, 3683·63, 3671·71, 3572·90, 2873·39, 2833·13, 2823·27, 2802·11, 2697·54, 2663·25, 2577·34, 2393·88, 2246·90, and the following to Tin:—2913·63, 2863·43, 2706·64.

Appendix D, p. 14. The line 2170·11 is due to Lead.

Appendix E, pp. 8, 9, &c. The lines 3393·09, 3391·09, 3057·73, 3012·07, 2345·59, 2288·19 are not due to Copper.

From "NATURE" (Dec. 5th, 1907).

"We have recently had an opportunity of inspecting and testing the binocular diffraction spectroscope patented and sold by Dr. Marshall Watts, and have found it to be a remarkably efficient instrument for the spectroscopic investigation of light-sources of definite form, such as vacuum tubes. It consists of an ordinary good field-glass having attached in front of each object-glass a transparent diffraction grating mounted on optically worked plane glass. In examining a luminous vacuum tube we found that the bright lines apparently stood out in relief, whilst the illumination, even in the second and third orders, was very satisfactory. The first-order spectrum of Capella, on by no means a perfect night, was seen as quite a bright colour band. For the examination of broader light-sources, such as flames or arcs, a metal or ebonite plate with a slit in it may be usefully employed in order to obtain a purer

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APPENDIX B.

THE 'Table of Corrections' given herewith has been obtained by a careful comparison of Professor Rowland's photographic map of the solar spectrum with the maps of Ångström and Cornu, upon which the tables given in the Index of Spectra are based.

Table of Corrections to be applied to reduce Ångström's and Cornu's Numbers to the Standard of Rowland's Map.

Wave-length	Correction	Wave-length	Correction
Above 6930	+1·7	From 4970 to 4935	+1·0
From 6930 to 6880	+1·6	„ 4935 to 4865	+0·9
„ 6880 to 6820	+1·5	„ 4865 to 4740	+1·0
„ 6820 to 6800	+1·4	„ 4740 to 4650	+0·9
„ 6800 to 6765	+1·3	„ 4650 to 4470	+0·8
„ 6765 to 6720	+1·2	„ 4470 to 4380	+0·7
„ 6720 to 6660	+1·1	„ 4380 to 4170	+0·6
„ 6660 to 6230	+1·0	„ 4170 to 4130	+0·7
„ 6230 to 6180	+0·9	„ 4130 to 4100	+0·8
„ 6180 to 6155	+1·0	„ 4100 to 4060	+0·7
„ 6155 to 6135	+1·1	„ 4060 to 4040	+0·6
„ 6135 to 6130	+1·0	„ 4040 to 3850	+0·7
„ 6130 to 6110	+0·9	„ 3850 to 3730	+0·6
„ 6110 to 6080	+1·0	„ 3730 to 3720	+0·5
„ 6080 to 6060	+1·1	„ 3720 to 3660	+0·4
„ 6060 to 6000	+1·0	„ 3660 to 3640	+0·8
„ 6000 to 5970	+0·9	„ 3640 to 3620	+0·6
„ 5970 to 5810	+1·0	„ 3620 to 3530	+0·8
„ 5810 to 5780	+0·9	„ 3530 to 3480	+0·6
„ 5780 to 5610	+1·0	„ 3480 to 3470	+0·8
„ 5610 to 5540	+1·1	„ 3470 to 3440	+0·7
„ 5540 to 5485	+1·0	„ 3440 to 3420	+1·1
„ 5485 to 5435	+0·9	„ 3420 to 3360	+1·7
„ 5435 to 5350	+1·0	„ 3360 to 3330	+2·5
„ 5350 to 5335	+0·9	„ 3330 to 3290	+2·2
„ 5335 to 5325	+1·0	„ 3290 to 3280	+2·0
„ 5325 to 5300	+0·9	„ 3280 to 3240	+1·9
„ 5300 to 5175	+1·0	„ 3240 to 3220	+1·8
„ 5175 to 5150	+0·9	„ 3220 to 3190	+0·8
„ 5150 to 4990	+0·8	„ 3190 to 3160	+0·4
„ 4990 to 4970	+0·9		

The spectra of cobalt and nickel now given are upon Ångström's scale, but the absorption spectrum of iodine rests upon the numbers of the Potsdam catalogue of 300 solar lines, the numbers of which agree very closely indeed with those of Rowland, as is seen in the following comparison:—

	Potsdam Catalogue	Rowland's Map
C (Hydrogen)	6563·14	6563·042
D_1(Sodium)	5896·25	5896·156
D_2(Sodium)	5890·23	5890·188
E_1(Iron)	5270·55	5270·497
E_2(Iron)	5269·90	5269·720
b_1(Magnesium)	5183·93	5183·798
b_3(Iron)	5169·33	5169·159
F(Hydrogen)	4861·64	4861·492
G(Iron)	4308·25	4308·023

A

Cobalt.[1]

A number printed in italics signifies that the wave-length was directly measured by means of a grating. The numbers given under 'Oscillation Frequency' are *in vacuo*.

* Double. † With cobalt chloride in oxyhydrogen flame. ‡ Also a nickel line. § Also an iron line.

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
3997·3	1	10	25009	*3656·1*	1	3	27343
†*3994·7*	10	8	25026	*3654·0*	1		27359
3991·4		3	25046	*3648·8*	1		27398
3990·2		3	25054	*3642·7*	3	3	27444
3987·1		1	25073	*3641·1*	1	1	27456
†3978·7	8	8	25126	*3638·9*	1	3	27472
3974·1		3	25155	*3636·1*	1	1	27494
3968·8	1		25189	*3634·2*	4	1	27508
3957·7	1	4	25259	*3632·2*	1	1	27523
3955·7	1	1	25272	†*3627·3*	6	10	27560
3952·4	1	1	25293	3614·8	1	1	27655
3944·9	1	1	25341	*3611·3*	1	1	27682
†*3940·9*	1	6	25367	§*3605·0*	6	8	27731
†*3935·5*	6	3	25402	*3601·6*	6	10	27757
3916·2	1	1	25527	‡*3594·4*	6	10	27812
†3909·0	1	4	25574	*3586·7*	10	8	27872
3905·2	1	4	25599	§*3584·7*	6	8	27888
3894·3	3		25671	*3577·4*	1	3	27945
†*3893·4*	10	10	25677	†*3574·9* }	10	10	27964 }
3884·0	1		25739	†*3574·5*			27967
3881·0	6	10	25759	†*3568·9*	10	10	28011
3876·1	1	3	25791	†*3564·5*	6	10	28046
†*3873·2*	6 }	10	25810	3562·3	1		28063
†*3872·4*	8		25816	†*3560·5*	8	6	28077
3860·5	4		25895	*3552·4*	1	1	28141
†*3844·8*	10	8	26001	*3550·1*	4	6	28159
†*3841·4*	8	4	26024	3548·0	1	1	28176
3830·3	1		26099	*3544·7*	1	1	28202
§*3815·7*	1		26200	*3542·8*	4	3	28217
§*3815·1*	1		26204	†*3532·8*	4	6	28297
3807·3	1	3	26258	‡*3529·3*	6	10	28325
3777·0	1	3	26468	†*3528·4*	1	4	28333
3774·0	1	3	26489	*3526·3*	4	6	28349
3769·7	1		26520	†*3522·9*	6	6	28377
3753·9	1		26631	§*3520·9*	6	8	28393
†*3745·8*	10		26689	*3519·5*	3	6	28404
3735·2	1		26764	*3517·7*	6	8	28419
3732·8	1	3	26782	†*3512·0*	4	6	28465
3731·8	4	3	26789	‡*3509·7*	1 }	6	28483 }
3729·8	3	3	26803	†*3509·3*	4		28487
3711·6	1		26935	†*3505·9*	10	8	28517
†*3703·5*	8	10	26993	3503·4	1		28535
3701·7	6	1	27007	*3502·0*	3 }		28546
3692·8 }	6	6	27072	†*3501·6*	10	10	28549
3692·4			27075	*3501·0*	4		28554
3690·2	1	1	27091	*3496·0*	3	6	28595
3682·5	6	8	27147	†*3495·1*	6	10	28602
3680·8	1		27160	*3490·6*	3	4	28639
3661·6	6	*4	27303	†*3488·8*	10	10	28654

[1] Liveing and Dewar, *Phil. Trans.* clxxix. 231 (1888).

COBALT—*continued*.

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
3484·7	4	4	28688	*3319·0*	6	4	30120
†*3482·7*	6	10	28704	*3313·6*	4	3	30169
3478·0	1	3	28743	‡*3311·7*	3	3	30187
3476·0	1	8	28760	3309·1	3		30211
†*3473·4*	10	10	28781	3308·2	1	1	30219
†‡§*3465·2*	8	10	28849	*3306·5*	1	1	30234
†*3462·2*	8	8	28874	3303·2	1	1	30264
3460·6	3	4	28882	*3294·2*	1		30347
3454·6	4	6	28938	3286·6	3	3	30417
‡†*3452·9*	8	8	28953	3284·2	1		30439
3448·9	3 }	10	28986	*3282·9*	8	6	30452
†*3448·6*	6 }		28989	3278·5	3	1	30492
‡†*3445·7*	4	6	29013	3277·2	1	4	30504
†*3443·0*	6	6	29036	3276·0	1	1	30516
3442·3	1	6	29047	3271·3	2	1	30560
3438·2		1	29076	3264·4	*3	3	30624
‡3436·8	*3	4	29088	3262·7		1	30640
‡*3432·9*	6 }	10	29121	3261·7	1	3	30649
†*3432·4*	6 }		29126	*3260·1*	4	3	30664
3431·3	3 }	8	29135	*3253·7*	4	4	30725
†*3430·9*	4 }		29138	3249·6	1	3	30764
‡*3423·2*	*4	6	29204	§*3246·7*	6		30791
†*3416·5*	4	8	29261	§*3243·4*	4	3	30822
3415·2	1		29272	*3236·7*	3	4	30886
3414·2		8	29281	3235·2	3	3	30900
3412·0	6 }	10	29300	*3232·4*	3	4	30927
†*3411·7*	8 }		29302	3226·5	1	1	30984
†*3408·6*	6	10	29329	3218·7	3	4	31059
3406·1	1		29350	3210·1	1	1	31142
‡†*3404·5*	8	10	29364	3188·0	3	3	31358
3394·8	6	10	29448	3181·7	3	3	31420
3394·2	6		29453	*3176·6*	4	3	31470
3387·6	6	10	29511	3174·8	1	4	31488
3387·1	6	10	29515	3169·5	3	3	31541
3384·7	4	8	29536	3164·3	1	1	31593
‡*3380·0*	1	10	29577	3161·3	1	1	31622
3378·0	2	1	29594	3159·2	3	3	31644
3376·6	1	2d	29607	*3158·2*	6	6	31654
3370·4	4	4	29661	*3154·2*	8	6	31694
3366·6	6	10	29695	3152·3	1	1	31713
3362·3	1	1	29733	3148·9	3	4	31747
‡*3360·8*	1	6	29746	*3146·6*	6	6	31770
3353·9	8	10	29807	*3139·5*	6	6	31842
3352·3	4		29821	*3136·8*	6	8	31869
3348·9	1	3	29852	*3130·4*	4	1	31935
3347·7	3	3	29862	3126·7	1	1	31972
3346·4	3	3	29874	*3121·1*	8	8	32030
3342·2	3	3	29911	3113·0	3	3	32113
3340·8	1 }	3	29924	3109·5	1	1	32149
3340·2	1 }		29929	3109·0	1	1	32154
3339·3	3	3	29937	3103·7	3	3	32213
3333·6	8	10	29989	3101·8	1		32228
3329·0	1	1	30030	3097·6	4	6	32273
3326·4	3	3	30053	3089·0	4	4	32363
3324·8	3	3	30068	3086·3	8	8	32392
‡*3321·7*	4	4	30096	3082·1	6	6	32436

COBALT—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
3078·9	1	1	32470	§*2806·7*	4		35618
3073·4	1	1	32528	§2803·3	1	2	35661
3072·0	8	8	32542	*2801·7*	*3		35681
3071·8		1	32545	2798·4	1	1	35723
3064·0	1	4	32627	2796·6	1		35746
3063·0	1	3	32638	2796·3	1		35750
3061·4	8	6	32655	2795·8	1		35756
3059·6	1	1	32674	2793·4	6		35787
3050·6	4	6	32771	§2789·1	1		35842
3048·6	6	6	32792	*2786·9*	*3		35871
3043·6	6	6	32846	2785·7	*3		35886
3042·2	1	3	32861	2785·2	*3		35892
3034·0	8	3	32950	2778·5	1	1	35979
3033·8		3	32952	*2775·7*	8		36015
3017·0	6		33136	‡2774·8	*3	1	36027
3015·2	1	1	33155	*2768·6*	4	1	36108
3013·2	4	4	33177	*2766·5*	3		36135
3010·3	1	3	33209	2766·0	3	4	36141
3008·5	*1	1	33229	2763·9	3	4	36169
3000·1	1	2	33332	*2761·0*	1	3	36207
2994·7	1		33382	2757·1	1	1	36258
2989·1	6	6	33445	2744·7	3	3	36422
2986·5	6	6	33474	2738·6	1		36503
2983·3	1	1	33510	2734·3	*3		36560
2971·2	*1		33646	2732·6	1		36583
2954·1	*10		33841	2730·7	1	1	36609
2942·5	*8	8	33974	2728·8	*4		36635
2930·0	*8		34119	2727·5	*4		36653
2929·0	1	1	34131	*2720·6*	*4		36746
2927·2	1	1	34152	2715·3	3	6	36817
2918·1	*6		34258	2714·5	1		36828
2906·5	1	3	34395	*2713·9*	6		36836
2899·3	1	6	34480	§*2708·6*	1	1	36908
2897·5	*3		34502	*2707·4*	*3		36925
2890·0	8	1	34591	§*2706·9*	*1		36932
2886·0	3	4	34639	§*2706·2*	*4		36941
2883·1	*1		34674	*2701·9*	4		37000
2881·3	1	6	34696	*2696·4*	1		37075
2879·9	*1		34713	2696·0	1		37081
2870·4	8		34827	2695·9	1		37082
‡2865·1	1		34892	*2695·3*	1	6	37091
2862·2	1	3	34927	*2694·1*	8	1	37107
2849·8	1	3	35079	*2692·5*	3		37129
§2847·9	*3		35102	*2689·2*	3		37175
2845·2	1		35136	‡*2684·0*	*6		37247
2836·7	1	1	35241	2681·5	1		37281
2834·3	6		35271	2679·8	3		37305
2824·5	8	8	35393	2679·0	1	4	37316
2823·2	1		35409	2677·4	3		37338
2822·7	*3		35416	2675·4	*6	4	37366
2821·1	*1	3	35436	‡2670·1	1		37441
2819·4	1	1	35457	*2669·7*	3	1	37446
2818·3	1	1	35471	*2662·7*	8	1	37545
2815·8	*1		35502	2653·3	6		37677
2815·2	4	6	35510	2648·4	8	10	37747
2810·3	6		35572	2646·1	3	6	37780

COBALT—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
2644·4	1	1	37804	*2524·2*	1	10	39604
2642·7	*1	1	37829	*2522·5*	4		39681
2634·5	3		37946	*2520·7*	3	10	39659
2631·9	6	1	37984	*2519·3*	10		39681
‡2628·4	*1(?)		38034	2517·3	3	8	39712
2627·3	1	6	38050	2516·9	4		34719
2626·6	*1	1	38060	2511·7	1	1	39801
2621·7	*1	4	38131	2511·4	1		39806
2619·3	4	1	38166	‡*2510·5*	10	10	39820
2618·5	4	8	38178	2509·4	1		39837
2613·8	6	1	38247	*2507·5*	4	4	39868
2613·0	4		38258	*2505·8*	10	10	39895
2605·3	1	2	38371	2504·1	1	6	39922
2605·2	4	4	38373	2501·7	*3	1	39960
2603·9	3	3	38392	2500·2	3	6	39984
2600·3	1	3	38445	*2498·2*	4		40016
§2598·8	1	1	39467	*2497·1*	6	6	40034
2592·9	1	1	38555	2496·3	1	8	40046
‡2586·8	8	1	38646	2495·1	1	4	40066
2584·8	1	3	38676	2494·4	1	3	40077
2582·6	3		38709	2490·4	1	6	40141
2581·7	6	1	38722	*2489·8*	6	6	40151
‡*2579·8*	10	3	38751	2486·9	1		40198
2574·4	6	3	38832	2486·7	1		40201
2573·1	1	4	38851	§*2485·9*	6		40214
2571·9	1	4	38870	*2484·8*	6		40232
2569·3	6		38909	2484·4	1		40238
2567·0	1	6	38944	2484·1	1		40243
2565·0	1		38974	2483·2	1	4	40258
2563·6	10	1	38995	2478·6	3		40332
2561·7	1	10	39024	2477·8	4		40345
2559·6	6	1	39056	§*2477·1*	4		40357
2558·9	8	1	38067	2476·9	1		40360
2556·9	4	4	39098	2476·2	1	6	40371
2556·3	6		39107	2476·0	1		40375
2553·1	1	4	38156	2474·9	*1		40393
‡2552·7	1	4	39162	2473·5	*1		40415
2552·2	4		39170	2472·5	1	8	40432
§2550·1	4		39202	2469·7	1	6	40478
§2549·7	*1	4	39208	2469·0	1	1	40489
2548·9	1	4	39220	*2466·5*	8		40530
2546·3	8		39260	*2463·7*	10	4	40576
2545·7	1	3	39270	2460·8	1		40624
2544·6	3	4	39286	2460·3	1	6	40632
2544·2	1	6	39293	*2459·0*	6		40654
2543·9	1		39297	2455·7	1	8	40708
2541·5	8	8	39334	2453·6	1		40743
2540·2	6		39355	2453·3	1	3	40748
2537·0	3	1	39404	2452·7	1		40758
2536·1	1	4	39418	2452·0	1	1	40770
2535·5	3	4	39427	*2449·4*	8		40813
2533·4	8		39460	*2448·7*	4		40825
2531·7	1	10	39487	§*2447·3*	8	3	40848
2529·6	6	6	39519	*2445·6*	6	1	40876
2528·1	8	8	39543	*2443·3*	6	3	40915
2524·5	8		39599	*2442·0*	8		40937

COBALT—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
2441·2	3	4	40950	§*2374·8*	4	1	42095
2440·6	1	4	40960	2372 6	3	3	42134
2439·7	*1		40975	2371·8	3	4	42148
2438·5	3	6	40995	*2371·5*	6	4	42153
2437·9	*1		41005	2370·1	3	4	42178
2436·5	6	8	41029	2366·6	1	3	42219
2436·2	1		41034	*2363·3*	10	6	42299
2435·8	1	3	41041	2361·2	1	1	42339
2434·6	3	8	41061	2360·8	1	1	42346
2432·0	10	10	41105	2360·3	4		42355
2430·0	1		41139	*2360·2*	3	1	42357
2429·6	3	3	41145	2360·0	4	1	42360
2427·8	6		41176	*2357·7*	4	4	42402
2425·7	3	1	41212	*2353·0*	10	6	42486
2424·5	4	*10	41232	*2352·1*	1	6	42502
2423·2	6	1	41254	2351·5	1	3	42513
2422·1	1	4	41273	§‡2350·6	3	3	42530
2421·6	1	1	41281	2348·1	1		42575
2420·3	10	1	41303	2347·4	3		42588
2418·1	6	4	41341	*2347·0*	6	3	42595
2417·2	6	6	41356	2346·7	1	3	42600
2416·5	6	3	41368	‡2346·2	4	1	42609
2415·7	4		41382	2345·2	3	3	42628
2415·5	6		41386	2344·3	4		42644
2414·8	3	8	41397	§*2344·0*	6		42649
2414·1	3	8	41409	‡*2340·8*	8		42708
2413·7	6	4	41416	2338·8	3	4	42744
‡*2412·2*	1	6	41442	2338·4	1	4	42751
2411·2	8	10	41494	*2337·6*	8	4	42766
2408·3	6	4	41509	‡2336·6	3	1	42784
2407·8	6		41518	*2335·9*	6	4	42797
2407·1	6	*10	41530	2333·7	1	1	42838
2406·9	1		41533	‡*2330·0*	6	3	42905
2405·1	4	1	41561	2328·7	1	1	42929
2404·0	4	1	41583	2327·3	3		42955
2403·8	6	4	41587	‡*2326·1*	6	4	42977
2403·3	1	1	41596	*2325·9*	6	3	42981
2402·4	1	1	41611	‡*2324·0*	6	4	43016
‡2401·6	1	8	41625	‡2321·0	1	3	43085
2401·3	1		41630	2319·6	1	4	43098
2397·8	4	3	41691	2318·2	1		43105
2396·9	10	3	41707	‡2316·8	6	3	43150
2395·1	4	4	41738	‡2315·5	1	4	43174
2393·4	4	1	41768	*2314·5*	8	3	43193
‡2392·1	4	4	41787	‡*2313·5*	8	6	43211
2391·5	1	4	41801	2313·1	4		43219
2389·1	6	4	41843	2312·1	3	3	43238
2388·4	10	1	41855	‡*2311·1*	10	6	43256
2388·3	3	4	41857	2310·4	1	1	43269
2386·1	6	1	41895	*2307·4*	*10	8	43326
2385·9	8	4	41899	2306·4	1		43344
2382·9	8	4	41952	‡2305·6	1		43359
‡2381·7	3		41973	2303·8	1		43393
2381·3	8	4	41980	2300·8	3	4	43450
2380·3	1	1	41997	2300·3	3	3	43459
2378·1	10	8	42036	2299·3	4	1	43478

Cobalt—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
2298·3	1	1	43497	2272·0	1		44000
2296·9	3	3	43524	2270·5	1		44030
2295·5	3	4	43550	‡2266·2	8		44113
2293·0	6	8	43598	2259·7	8		44240
2291·5	6	4	43626	2256·4	8		44305
2290·9	1	1	43638	2253·2	1		44367
2289·9	1	1	43657	2244·8	6		44533
2287·8	1	3	43697	2234·4	1		44741
2285·7	*8	8	43737	2231·5	1		44799
2283·1	3		43787	2229·5	1		44839
2281·9	1		43810	2219·6	1		45039
2281·5	4		43817	2215·9	1		45114
2280·1	3		43844	2214·1	1		45151
2278·1	1		43883	2205·7	1		45323
2275·9	1		43925	2298·2	1		45477
2275·1	1		43941	2293·1	1		45583
‡2274·2	1	1	43958	2291·9	1		45608
‡2273·3	3		43975	2290·2	1		45643

Nickel.[1]

* Double. † Also in oxyhydrogen flame. ‡ Also a cobalt line. § Also an iron line.

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
3857·8	8	8	25913	*3624·1*	1	3	27585
3848·9	3		25973	†*3618·8*	10	10	27625
3837·5	3		26050	†*3612·1*	6	6	27676
3831·7	1		26090	*3609·8*	8	8	27694
†*3806·6*	8	6	26263	*3608·6*	1	1	27703
†*3783·0*	6	4	26426	*3601·4*	3		27758
†*3775·0*	6	6	26482	†*3597·0*	10	10	27792
3768·9	8		26525	*3587·2*	*3	3	27868
3736·1	8	8	26758	*3576·1*	8		27955
3724·2		1	26843	§†*3571·2*	8	8	27993
§*3721·6*	6		26862	†*3565·7*	10	6	28036
3710·9		1	26940	*3561·1*	1		28072
3697·2		1	27039	*3552·8*	1		28138
3694·6		1	27058	*3550·8*	1		28154
3687·6	1		27110	*3547·5*	6	6	28180
3673·4	3	4	27215	*3529·9*	1	1	28321
3671·5		1	27229	‡*3529·2*	1	3	28326
3669·7	1	8	27242	*3527·1*	3	1	28343
3666·9		1	27263	3526·0	3		28352
3663·4	3		27289	†*3523·9*	10	10	28369
3659·3		3	27319	*3519·1*	6	6	28407
3657·5		1	27333	3518·0	1		28416
3655·2		1	27350	†*3514·4*	10	10	28445
3653·0		6	27366	§*3513·3*	8		28454
3634·9		4	27503	†‡*3509·7*	10	10	28483

[1] Liveing and Dewar *Phil. Trans.* clxxix. 231 (1888).

NICKEL—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc	
3507·3	1	1	28503
3505·9	1	3	28514
3501·8	3	4	28548
3500·0	8	8	28562
†*3492·3*	10	10	28625
3485·2	3	3	28684
3483·1	8	8	28707
3471·9	8	8	28793
3470·8	*3	1	28803
3468·9	3	4	28818
3466·8	3	3	28836
‡*3465·1*	6	8	28850
†*3461·1*	10	10	28883
3457·9	10	10	28911
†3457·7	*3	8	28913
3453·5	4	4	28948
†*3452·9*	3	4	28953
‡†*3452·3*	10	4	28958
3445·7	10	10	29013
3441·6	1		29048
‡*3436·7*	8	8	29089
‡*3433·0*	10	10	29121
‡*3423·1*	10	8	29205
3420·6	1	1	29224
3413·8	10	8	29284
†*3413·4*	4	10	29288
3412·9	8	8	29292
3409·0	1	3	29325
3406·6	6	6	29346
‡*3404·5*	3	1	28364
3402·8	1		29379
3400·5	1	3	29399
3392·4	8	8	29469
3390·4	8	8	29486
‡*3380·0*	10	10	29577
3374·0	4	4	29630
3373·6	1	4	29633
3373·3	6	6	29636
3371·3	6	4	29653
§*3368·9*	8	6	29674
†*3367·2*	1	8	29689
3365·5	4	4	29704
3365·1	4	4	29708
3361·0	3	6	29744
‡*3360·9*	6	8	29745
3358·1	1	3	29770
3349·8	3		29844
‡*3321·6*	6	4	30097
3319·7	6	6	30114
3315·1	6	6	30156
3312·4	1		30180
‡*3311·8*	3	1	30186
3290·1	1		30385
3282·2	3	4	30458
3274·4	1		30531
§*3270·6*	1	1	30566
3250·1	4	3	30760
3247·8	1	1	30781
3242·6	6	6	30830
3234·2	6	6	30910
§*3232·6*	8	10	30925
3226·3	1	1	30986
3224·6	4	4	31002
3221·1	3	3	31036
3217·4	3		31071
3216·6	1	1	31079
3216·0	1		31081
§*3213·7*	3		31107
3212·3		1	31121
3201·5	1		31226
§*3196·6*	6	6	31273
3194·9	1	4	31290
3183·8	1	6	31399
§*3182·6*	1	1	31411
3181·2	1		31425
3179·2	*6	6	31445
3158·9	*3	3	31656
3145·5	3	4	31781
3134·0	1	1	31898
§*3133·6*	10	10	31902
3113·7	3	4	32106
§*3105·0*	3	6	32196
3101·4	8	8	32233
3101·1	6	6	32236
3098·6	4		32262
3096·6	4		32283
3086·6	8		32389
3080·3	6	6	32455
3064·2	6	6	32625
§*3057·2*	8		32700
3053·9	8	6	32735
3050·4	8	8	32773
§*3044·5*	4	4	32836
3037·5	8	8	32912
3031·4	4	4	32978
3018·8	6		33116
3011·5	10	10	33196
3003·2	8	8	33288
3002·1	8	8	33300
§*2994·1*	6	6	33389
2992·2	6	8	33410
2988·0	1		33457
2987·7	*3		33460
2983·6	4	6	33506
§*2981·2*	6	6	33533
2968·7	*3		33674
2957·8	1		33799
2954·5	*3		33836
2947·1	4		33921
2943·5	8	10	33963
§2938·7	1	1	34018
§*2936·3*	*8		34046

NICKEL—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
2934·3	1		34069	2557·5	1		39088
§*2928·4*	*6		34138	*2554·7*	4		39131
2918·8	*1		34250	‡*2552·6*	*1	4	39163
2913·2	8	8	34316	*2549·1*	1	1	39217
2906·9	3	6	34390	*2545·4*	6	6	39274
2900·6	1		34465	§*2543·2*	3		39308
2898·8	1		34486	2539·5	1	6	39365
2889·1	1		34602	2524·1	1		39605
2882·2	*1		34685	2520·0	1	1	39670
2880·9	*1		34700	‡*2510·6*	10	8	39818
‡2865·1		6	34892	*2509·6*	1		39834
2863·3	8		34914	‡*2505·9*	6		39893
2823·9	1		35401	2496·9	1	1	40037
2820·8	6	10	35440	*2483·6*	*6	6	40251
2807·8	1		35604	2476·6	1	1	40365
2806·0	*1		35626	§*2472·8*	8	6	40427
2805·0	8	6	35639	§2471·8	1	8	40443
‡*2774·7*	*4		36028	2455·4	4	1	40713
2760·4	1		36215	2453·7	1	8	40741
2758·7	4		36237	2448·1	3		40835
2708·3	4	4	36913	§2441·5	1	10	40945
§2701·2	3	1	37010	*2437·5*	*10	6	41012
2700·4	1	1	37021	§2433·9	1	6	41073
2690·2	1		37161	§2433·2	4		41085
‡2684·0	8		37247	2431·2	1		41118
2678·8	6		37319	2426·8	1		41193
2674·4	1		37380	2423·4	1	6	41251
2672·1	1		37412	2420·8	1	8	41295
§2670·0	3		37442	2419·0	1	6	41326
2664·9	1		37513	*2416·0*	*10	8	41377
2659·5	3	3	37590	2412·8	3	6	41432
2655·6	6	1	37645	‡*2412·1*	1	6	41444
2648·6	1	1	37744	*2404·8*	1	1	41570
2646·8	6	6	37770	‡2401·7	1	6	41623
2643·4	1		37819	§*2400·1*	1		41648
2641·0	1		37853	2397·2	1		41741
§*2639·5*	6		37874	§2394·7	1	6	41745
2636·8	1		37913	*2394·3*	8	8	41752
2632·4	1		37971	§*2394·0*	8	8	41757
2628·4	1		38034	2392·6	4	6	41701
2626·3	1		38065	‡2392·0	1	1	41792
§*2614·9*	6		38231	2388·7	1	1	41850
2609·6	6		38308	§*2388·5*	4	1	41853
§2606·7	1		38351	*2387·5*	6	4	41871
§*2606·1*	1		38360	*2386·3*	1	6	41892
2600·8	1		38438	†§2381·8	8	3	41971
§2593·1	3		38552	2378·6	1	1	42027
‡2586·7	1	1	38647	2375·6	1	6	42080
2584·4	3		38682	*2375·0*	8	4	42091
2583·5	4		38695	2370·9	1	1	42164
‡2579·9	1	1	38749	2369·5	4		42189
2575·7	4	4	38812	2368·9	3	1	42199
2571·7	1	1	38873	*2367·0*	4	3	42233
2568·2	1	1	38926	§*2366·1*	4	1	42249
2565·7	*4		38964	*2358·5*	1	6	42337
2559·8	4	3	39053	*2355·9*	6	6	42434

NICKEL—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
‡2350·5	1	1	42531	2277·8	6	4	43888
§2349·8	*1	1	42544	*2277·0*	6	1	43904
2347·6	1	4	42584	2276·3		3	43917
‡2346·2	1	4	42609	§*2275·7*	3	4	43929
2345·0	1		42631	‡§2275·0	4	3	43942
§*2344·7*	8	6	42637	‡2274·1	6	6	43960
2343·5	1		42658	‡2273·2	1	1	43977
2343·0	4	1	42668	2272·3	1		43995
‡*2340·7*	8		42709	2271·1	1	6	44018
2337·1	1	3	42775	2270·3	1		44033
‡2336·6	1	6	42784	*2269·9*	*10	10	44041
2336·2	*6	1	42792	*2269·1*	1	6	44057
2334·1	8	1	42830	‡2266·1	1	3	44115
‡2330·1	1		42904	§2264·8	3		44140
2329·6	4	8	42913	§*2264·1*	8	10	44154
‡*2326·0*	8	6	42979	§2263·1		4	44173
2325·5	4	8	42989	2262·6	1	1	44183
‡2324·0	*1		43016	2261·1	1	4	44213
2323·3	*1		43029	§2260·3	1		44228
2322·3	1	6	43048	2259·4	1	6	44246
2321·6	1	3	43061	2258·9	3		44256
‡*2321·0*	4	8	43072	2257·6	4	6	44281
2319·3	6	6	43103	*2255·7*	6	3	44318
2318·0	6		43128	*2254·7*	6	6	44338
‡2316·8	1	6	43150	2253·9	1		44354
‡*2315·6*	*10	6	43172	*2253·5*	*10	8	44362
‡*2313·6*	3	6	43210	2252·6	1		44379
2313·4	1	6	43213	2251·4	1	4	44403
2312·5	6		43230	§2251·1	1	1	44409
2311·8	4	6	43243	§2250·5	1	1	44421
‡2311·2	1		43254	2250·2	1		44427
2310·6	*3	6	43266	2249·2	1		44446
2308·1	6	1	43312	§2248·8	1	4	44454
‡2305·7	1		43358	2247·4	1		44482
2304·8	6		43374	*2246·6*	3		44498
2303·3	6	4	43403	*2245·9*	*1		44512
2302·5	8		43418	2244·4	*1	8	44541
2302·0	8		43427	§*2242·2*	1	3	44585
2301·5	1		43437	2241·2	1		44605
2299·8	6		43469	2239·8	*1		44633
2299·2	6		43480	2238·2	*1		44665
2298·0	*6	1	43503	2237·6	*1		44677
2297·1 }	6	1	43520	2235·5	1		44719
2296·7 }			43527	2233·5	3		44759
2296·2	8		43537	2231·2	1		44805
2295·3	1		43554	‡§2229·6	*4	6	44837
2292·7	1	1	43603	§2227·2	1	8	44885
2290·7	1		43641	2226·7	1		44895
2289·6	4	4	43662	*2225·8*	6	6	44914
2287·4	8	1	43704	§2225·3	1		44924
2286·8	8	6	43716	*2224·3*	6	8	44944
2284·8	1		43754	*2223·8*	6		44954
2283·7	1	1	43775	*2222·3*	6	8	44984
2280·6	*1		43835	2221·7	1		44996
2279·2	1	0	43862	2221·3	1	3	45004
2278·4	*8	6	43877	2220·6	3		45019

NICKEL—*continued.*

Wave-length	Intensity and Character		Oscillation Frequency	Wave-length	Intensity and Character		Oscillation Frequency
	Spark	Arc			Spark	Arc	
2219·8	6	1	45035	2197·2	*1	6	45498
2219·0	1		45051	2193·2	1		45581
2217·4	3	3	45084	2190·6	1	4	45635
2216·0	6	3	45112	2190·0	1	4	45647
‡*2215·8*	8	10	45116	*2188·2*	3	1	45685
2212·5	4	3	45183	2185·0	6	1	45752
§2211·4	1	3	45206	2184·2	6	6	45769
§2210·5	4	4	45224	2182·8	1	6	45798
2209·8	*8	6	45239	2179·9	4		45859
2206·1	8	8	45314	2179·4	1		45869
2205·2	*6	6	45333	2176·7	3		45926
2203·0	*1		45378	*2176·0*	3		45941
2200·8	8	4	45424	2174·4	4	6	45975
2198·4	3	4	45473	2173·8	4	6	45988
2198·0	*1		45481				

IODINE (ABSORPTION).[1]

* Double. † Triple. ⊙ Coincident with a solar line.

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
6316·51	4	15826·8	6301·16†	3	15865·3
6314·66	2	15831·4	6300·51†		15866·9
6314·26	2	15832·4	6300·22	3	13867·7
6313·90	2	15833·3	6300·00	3	15868·2
6313·53	3	15834·2	6299·58*	5⊙	15869·3
6313·18	3	15835·1	6298·94*	5⊙	15870·9
6312·76	3	15836·2	6298·29	6	15872·5
6312·23*	3	15837·5	6297·76*	5	15873·9
6311·59*	3	15839·1	6297·15*	3	15875·4
6311·11	3	15840·3	6296·82	3	15876·2
6310·74	4	15841 2	6296·31	5⊙	15877·5
6310·36	3	15842·2	6295·91	3	15878·5
6310·08	4	15842·9	6295·31	5	15880·0
6309·38	4	15844 6	6294·75	6	15881·5
6308·67†	4	15846·4	6294·25	6	15882 7
6308·05	4	15848·0	6293·72*	4	15884·1
6307·73	2	15848·8	6293·29	3⊙	15885·1
6307·38	3	15849·7	6292·91*	4	15886·1
6307·00	3	15850·6	6292·45*	5	15887·3
6306·64	3s	15851·5	6291·94	6	15888·6
6306·13*	3	15852·8	6291·46	6	15889·8
6305·69	3	15853·9	6290·98*	4	15891·0
6305·38	3	15854·7	6290·62	3⊙	15891·9
6304·83	3	15856·1	6290·23*	3	15892·9
6304·21	4	15857·6	6289·83	6	15893·9
6303·57	3	15859·2	6289·34	4	15895·1
6302·34	3⊙	15862·3	6288·90*	4	15896·2
6301·50	2	15864·4	6288 63	2	15896·9

[1] Hasselberg, *Mémoires de l'Académie des Sciences de St. Pétersbourg*, viie série, tom. xxxvi. (1888).

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
6288·21*	4	15898·0
6287·82	3	15899·0
6287·36	4	15900·1
6286·83*	4	15901·4
6286·37	3	15902·6
6285·98	4	15903·6
6285·61	3	15904·6
6285·40	3	15905·1
6285·08	4	15905·9
6284·68	4	15906·9
6284·19	4	15908·2
6283·86	3	15909·0
6283·45	3	15910·0
6282·98	4s	15911·2
6282·59	3	15912·2
6282·28	3⊙	15913·0
6281·90*	4	15914·0
6281·14	5	15915·9
6280·41	5 } ⊙	15917·7
6280·01	3 }	15918·7
6279·75	5	15919·4
6279·46	5⊙	15920·1
6279·13	3	15921·0
6278·79	5	15921·8
6278·25	2	15923·2
6277·88	5⊙	15924·1
6277·36	5 } ⊙	15925·5
6277·00	5 }	15926·4
6276·36	4	15928·0
6275·56*	4	15930·0
6275·11*	2	15931·2
6274·73	3	15932·1
6274·35	2	15933·1
6274·01	5	15934·0
6273·67	2	15934·8
6273·24	4	15935·9
6272·85	3	15936·9
6272·42	4	15938·0
Group 6272	–6234	
6272·42	4	15938·0
6271·75	4	15939·7
6271·06*	3	15941·5
6270·22	2	15943·6
6269·81	2	15944·6
6269·54	4	15945·3
6269·07	2	15946·5
6268·78	4	15947·3
6268·38	2	15948·3
6268·06	4	15919·1
6267·64	2	15950·2
6267·30	4	15951·0
6266·69*	3	15952·6
6266·04	4	15954·2
6265·28	5	15956·2
6264·60	3	15957·9
6264·30	2	15958·7
6263·94	3	15959·6
6263·58	2	15960·5
6263·23	3	15961·4
6262·91	2	15962·2
6262·59	4	15963·0
6261·95	3	15964·6
6261·42*	5	15966·0
6260·73*	4	15967·8
6260·37	3	15968·7
6260·10	5	15969·4
6259·42	3	15971·1
6258·80	4	15972·7
6258·22	4	15974·2
6257·68	4	15975·5
6257·08	3	15977·1
6256·42	4	15978·8
6255·86	4	15980·2
6255·35	4	15981·5
6254·74*	5	15983·1
6254·26	4	15984·3
6253·89	3	15985·2
6253·61	3	15986·0
6253·07	6	15987·3
6252·96*	6	15987·6
6252·59	4	15988·6
6252·12	5	15989·8
6251·85	3	15990·5
6251·58	3	15991·1
6251·33	2	15991·8
6251·06	4	15992·5
6250·62	3	15993·6
6250·12*	5	15994·9
6249·63	3	15996·1
6249·15	5	15997·4
6248·66	3	15998·6
6248·19	5	15999·8
6247·60	2	16001·3
6247·27	3	16002·2
6246·94	3	16003·0
6246·41	3	16004·4
6246·05	4	16005·3
6245·59	4	16006·5
6245·21	3 } band	16007·4
6244·78	4 }	16008·5
6244·48	3 } band	16009·3
6243·96	4 }	16010·7
6243·62	4	16011·5
6243·24	4	16012·5
6242·89	2	16013·4
6242·57	4	16014·2
6242·23	3	16015·1
6241·88	4	16016·0
6241·55	3	16016·8
6241·12	5	16017·9
6240·89	4⊙	16018·5
6240·60	4	16019·3
6240·26	3	16020·1
6239·89	3	16021·1

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
6239·41	3	16022·3	6219·36	2	16074·0
6239·09	2	16023·1	6219·15	2	16074·5
6238·56	3	16024·5	6218·81	3	16075·4
6238·24	3	16025·3	6218·50	4	16076·2
6237·72*	6	16026·7	6218·21	4	16077·1
6237·28*	2	16027·8	6217·86	3	16077·9
6236·95	4s	16028·6	6217·58	3	16078·6
6236·56	2	16029·6	6217·12*	5	16079·8
6236·21	4	16030·5	6216·83	2	16080·5
6235·88	4	16031·4	6216·57	4	16081·2
6235·46	4	16032·5	6216·23	2	16082·1
6235·03	4	16033·6	6215·93*	5	16082·9
6234·77	3	16034·2	6215·27	4	16084·6
6234·43	4	16035·1	6214·92	4	16085·5
6234·23	4	16035·6	6214·64	4	16086·2
6233·93	4	16036·4	6214·26*	3	16087·2
			6213·83	4	16088·3
			6213·40	4	16089·4
Group 6234	–6191		6212·95*	5	16090·6
			6212·41	6	16092·0
6233·93	4	16036·4	6212·11	2	16092·7
6233·69	2	16037·0	6211·87	5	16093·4
6233·38	2	16037·8	6211·29*	5	16094·9
6232·58	3	16039·9	6210·86*	4	16095·9
6232·14	3	16041·0	6210·53	2	16096·8
6231 79	3	16041·9	6210·18*	6	16097·7
6231·41	2	16042·9	6209·64	4	16099·1
6230·81	2	16044·4	6209·40	2	16099·8
6230·51	4	16045·2	6209·17	5s	16100·4
6230·20	4	16046·0	6208·81	3	16101·3
6229·68	6	16047·3	6208·55	3 band	16102·0
6229·31	2	16048·3	6208·06	4	16103·2
6228·95	4	16049·2	6207·56	4	16104·5
6228·55	2	16050·2	6207·13*	5	16105·6
6228·24	5	16051·0	6206·69	4	16106·8
6227·95		16051·8	6206·16†	5	16108·2
6227·43*	3	16053·1	6205·66	4	16109·5
6226·85	3	16054·6	6205·24	5	16110·5
6226·51	2	16055·5	6204·79*	3 band	16111·7
6226·21*	2	16056·3	6204·28*	4	16113·0
6225·76	3	16057·4	6203·88	4	16114·1
6225·28	2	16058·7	6203·48*	4	16115·1
6224·98	3	16059·5	6203·08	3	16116·2
6224·58*	2	16060·5	6202·88	3	16116·7
6224·31	3	16061·2	6202·59	4	16117·4
6223·94	3	16062·1	6202·21	3 band	16118·4
6223·64	4	16062·9	6201·74	3	16119·6
6223·17	4	16064·1	6201·44	4	16120·4
6222·93		16064·7	6201·03	4	16121·5
6222·73	2	16065·3	6200·28*	4	16123·4
6222·41*	4	16066·1	6199·89	3	16124·4
6222·04	2	16067·0	6199·48	4	16125·5
6221·71	4	16067·9	6199·13	2	16126·4
6221·10	4	16069·5	6198·86	4	16127·1
6220·89		16070·0	6198·52	2	16128·0
6220·54	4	16070·9	6198·19	4	16128·9
6220·27	3	16071·6	6197·86	3	16129·7
6219·97	3	16072·4	6197·57	4	16130·5

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
6197·28 }	4	16131·2	6177·94	4	16181·7
6196·62 }		16133·0	6177·60 }	4	16182·6
6196·32	4	16133·7	6176·93 }		16184·4
6196·05	2	16134·4	6176·62	2	16185·2
6195·79	4	16135·1	6176·31	3	16186·0
6195·53	3	16135·8	6175·98	2	16186·9
6195·28	3	16136·4	6175·65	4s⊙	16187·7
6195·04	2	16137·1	6175·37	3	16188·5
6194·75	4	16137·8	6175·02	3	16189·4
6194·57	4	16138·3	6174·67	2	16190·3
6194·26*	4	16139·1	6174·40	2	16191·0
6193·84	4	16140·2	6174·09	4	16191·8
6193·46	4	16141·2	6173·60*	5	16193·1
6192·48	4	16143·7	6173 00*	5	16194·7
6192·18	2	16144·5	6172·58	3	16195·8
6191·87	6	16145·3	6172·34	3	16196·4
6191·46	4	16146·4	6172·00	4	16197·3
6191·21	2	16147·0	6171·74	4	16198·0
6190·97*	5	16147·7	6171·39	2	16198·9
			6171·17	2	16199·5
Group 6191	–6149		6170·60	2	16201·0
			6170·17*	3	16202·1
6190·97	5	16147·7	6168·93	3	16205·4
6190·60	2	16148·6	6168·66	3	16206·1
6190·21	3	16149·7	6168·36	3	16206·9
6189·79	2	16150·8	6167·94*	4	16208·0
6189·46	4	16151·6	6167·44*	4	16209·3
6188·97	3	16152·9	6167·03	4	16210·4
6188·64	3	16153·7	6166·45	3	16211·9
6188·25	4	16154·8	6166·03*	2	16213·0
6187·86	4	16155·8	6165·63*	3	16214·0
6187·47	3	16156·8	6165·31	4	16214·9
6187·09	3	16157·8	6164·92*	4	16215·9
6186·68	4	16158·9	6164·45*	4	16217·1
6186·32	3	16159·8	6163·61	4	16219·4
6185·98	3	16160·7	6162·92	3	16221·2
6185·62	2	16161·7	6162·13	4	16223·3
6185·23	4	16162·7	6161·59†	4	16224·7
6184·88	2	16163·7	6160·79	3	16226·8
6184·50	4	16164·6	6160·41	3	16227·8
6184·13	3 } band	16165·6	6160·11	3	16228·6
6183·79	4 }	16166·4	6159·78	2	16229·4
6183·45	3 } band	16167·3	6159·42	3	16230·4
6183·05	4 }	16168·4	6159·20	2	16231·0
6182·70	2	16169·3	6158·92	3	16231·7
6182·33	3	16170·3	6158·58	3	16232·6
6181·96	3	16171·2	6158·32	2	16233·3
6181·60	2	16172·2	6158·05	5⊙	16234·0
6181·22	4	16173·2	6157·71	5	16234·9
6180·89	3	16174·0	6157·16*	5	16236·3
6180·59	4s⊙	16174·8	6156·77	3	16237·4
6180·23	3	16175·7	6156·44	4	16238·2
6179·92	4	16176·6	6156·12	2	16239·1
6179·52	4	16177·6	6155·85	2	16239·8
6179·24	4	16178·3	6155·47	4⊙	16240·8
6178·86	4	16179·3	6155·16	3	16241·6
6178·57	4	16180·1	6154·80	2	16242·6
6178·21	4	16181·0	6154·53	4	16243·3

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
6154·33	3	16243·8	6133·09	2	16300·1
6154·06	3	16244·5	6132·79	3	16300·9
6153·76	5	16245·3	6132·48	2	16301·7
6153·49	5	16246·0	6132·20	3	16302·4
6153·08*	6	16247·1	6131·89	3	16303·3
6152·57	3	16248·4	6131·63	3	16304·0
6152·18	4s	16249·5	6131·35	3	16304·7
6151·44	4	16251·5	6131·05	2	16305·5
6151·01*	5	16252·6	6130·75	2	16306·3
6150·58	5	16253·7	6130·45	2	16307·1
6150·20*	4	16254·7	6130·10	4	16308·0
6149·83	4	16255·7	6129·85	2	16308·7
6149·48	6	16256·6	6129·60	2	16309·4
6149·08	4	16257·7	6129·34	2	16310·0
			6129·07	4	16310·8
			6128·77	2	16311·6
Group 6149–6111			6128·52	2	16312·2
			6128·21	4	16313·0
6149·08	4	16257·7	6127·98		16313·7
6148·75	3	16258·6	6127·65	3	16314·5
6148·10*	4	16260·3	6127·46		16315·0
6147·61*	3	16261·6	6127·17	4	16315·8
6147·19	3	16262·7	6126·95		16316·4
6146·94	2	16263·4	6126·63	3	16317·3
6146·70	2	16264·0	6126·17*	4	16318·5
6146·46	3	16264·6	6125·74*	3	16319·6
6146·20	2	16265·3	6125·26*	5	16320·9
6145·96	2	16265·9	6124·81*	4	16322·1
6145·65	3	16266·8	6124·35†	3s	16323·3
6145·24	3	16267·9	6123·79†		16324·8
6144·92*	3	16268·7	6123·42	3s	16325·8
6144·49	3	16269·8	6123·14	3	16326·6
6144·15	3	16270·7	6122·89	3	16327·2
6143·80	2	16271·7	6122·27	3	16328·9
6143·46	4	16272·6	6122·00	3	16329·6
6142·77	4	16274·4	6121·76	3	16330·2
6142·34	3	16275·3	6121·51*	5	1633[illegible]·9
6141·62	3	16277·4	6121·07*	4	16332·1
6141·30	3	16278·3	6120·73	4 band	16333·0
6140·96	3	16279·2	6120·30		16334·1
6140·64	3	16280·0	6119·90	4	16335·2
6140·27	3	16281·0	6119·51*	4	16336·2
6139·93	2	16281·9	6119·30	2	16336·8
6139·55	3	16282·9	6119·02	5	16337·5
6139·08	3	16284·2	6118·63	4	16338·6
6138·77	3	16285·0	6118·24*	4	16339·6
6137·53	3	16288·3	6118·00	3	16340·3
6136·57	3	16290·8	6117·63	3	16341·3
6136·21	3	16291·8	6117·34	3	16342·0
6135·86	4	16292·7	6117·00	3	16342·9
6135·62		16293·3	6116·75	2	16343·6
6135·29	3	16294·2	6116·50	4⊙	16344·3
6134·98	3	16295·0	6116·02*	4	16345·6
6134·64	3	16296·0	6115·56	3	16346·5
6134·35	2	16296·7	6115·29*	5	16347·5
6134·00	3	16297·7	6114·93	4	16348·5
6133·70	3	16298·5	6114·40		16349·9
6133·33	3	16299·4	6114·00	3	16351·0

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
6113·61	4	16352·0
6113·31	4	16352·8
6112·81		16354·1
6112·41	3	16355·2
6112·04	5	16356·2
6111·67	3	16357·2
6111·25*	6	16358·3
Group 6111–6069		
6111·25*	6	16358·3
6110·85	2	16359·4
6110·49	4	16360·4
6110·13	2	16361·3
6109·70*	5	16362·5
6109·30	2	16363·6
6108·87	6	16364·7
6108·20*	3	16366·5
6107·80	2	16367·6
6107·45	3	16368·5
6107·08	2	16369·5
6106·71	4	16370·5
6106·35	3n	16371·5
6106·00	3	16372·4
6105·60	3	16373·5
6105·20	3	16374·5
6104·92	3	16375·3
6104·56	5	16376·3
6104·25	5	16377·1
6103·86	4	16378·1
6102·78	4	16381·0
6102·12	4	16382·8
6101·76	3	16383·8
6101·44	4s	16384·6
6101·17	2	16385·3
6101·00	2	16385·8
6100·72	2	16386·6
6100·43	3 band	16387·3
6100·10	5 band	16388·2
6099·43	3	16390·0
6099·02	3	16391·1
6098·74	3	16391·9
6098·44	2	16392·7
6098·08	3	16393·6
6097·81	2	16394·4
6097·48	4	16395·3
6096·86	4 ⊙	16396·9
6096·52	2	16397·8
6096·24	4	16398·6
6096·00	4	16399·2
6095·62	3	16400·3
6095·35	3	16401·0
6095·00	4	16401·9
6094·74	2	16402·6
6094·43	3	16403·5
6094·14	3	16404·2
6093·81	3	16405·1
6093·52	3	16405·9

Wave-length	Intensity and Character	Oscillation Frequency
6093·13	4	16407·0
6092·97		16407·4
6092·70	2	16408·1
6092·39	4	16409·0
6092·03	4	16409·9
6091·79	2	16410·6
6091·52	3	16411·3
6091·16	3	16412·3
6090·80	2	16413·2
6090·48	2 ⊙	16414·1
6090·13	3	16415·0
6089·61	3	16416·4
6089·36	2	16417·1
6089·14	2	16417·7
6088·89	2	16418·4
6088·61	5	16419·1
6088·35	5	16419·8
6087·95*	3	16420·9
6087·44*	5	16422·3
6086·91*	3	16423·7
6086·48*	5	16424·9
6085·93*	3	16426·4
6085·52	5 ⊙	16427·5
6085·00	4	16428·9
6084·51	5	16430·2
6084·06	3	16431·4
6083·85	3	16432·0
6083·55*	5	16432·8
6083·16	3	16433·8
6082·64	4	16435·2
6082·39	4	16435·9
6081·70	4	16437·8
6081·33*	5 band	16438·8
6080·92	5 band	16439·9
6080·46	4	16441·2
6080·03	4	16442·3
6079·67	4	16443·3
6079·35	3 ⊙	16444·2
6078·87*	5	16445·5
6078·51	3	16446·4
6078·14	3	16447·4
6077·75	4 band	16448·5
6077·39		16449·5
6077·10	4	16450·3
6076·69	4	16451·4
6076·40	4	16452·2
6076·12	3	16452·9
6075·79	4	16453·8
6075·49	4	16454·6
6075·18	4	16455·2
6074·80	3	16456·5
6074·22*	5	16458·1
6073·71	4	16459·4
6073·34	4	16460·4
6073·01	3	16461·3
6072·66*	3	16462·3
6072·27 †	5	16463·3
6071·69 †	5	16464·9

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
6071·46	3	16465·5	6052·11	4	16518·2
6071·08	3 } band	16466·6	6051·52	6	16519·8
6070·71	6 } band	16467·6	6050·98	4	16521·2
6070·43	3 } band	16468·3	6050·48	5	16522·6
6069·95	4	16469·6	6050·29	2	16523·1
6069·67	3	16470·4	6050·00	? }	16523·9
6069·31	5	16471·4	6049·30*	4 }	16525·8
Group 6069–6031			6048·93	4	16526·8
			6048·75	4	16527·3
6069·31	5	16471·4	6048·42	3	16528·2
6068·95	3	16472·3	6048·23	3	16528·8
6068·60*	3	16473·3	6047·82*	6	16529·9
6068·19	2	16474·4	6047·33*	4	16531·2
6067·80	3	16475·5	6046·87*	6	16532·5
6067·49	2	16476·3	6046·39*	4	16533·8
6067·11*	3	16477·3	6045·94*	6	16535·0
6066·71	3	16478·4	6045·45*	4	16536·4
6066·31*	4	16479·5	6045·00*	5	16537·6
6065·61	5	16481·4	6044·53*	4	16538·9
6065·28	2	16482·4	6044·13*	5	16540·0
6064·92*	3	16483·3	6043·66*	4	16541·3
6064·56	3	16484·3	6043·25*	5	16542·4
6064·20*	3	16485·2	6042·81	6	16543·6
6063·87	2	16486·1	6042·43	4⊙	16544·6
6063·49	6	16487·2	6042·00	3	16545·8
6063·16	2	16488·1	6041·61	4	16546·9
6062·77*	3	16489·1	6041·17	3	16548·1
6062·46	4s	16490·0	6040·79	4	16549·1
6062·11	4s	16490·9	6040·40	3	16550·2
6061·44	4	16492·7	6040·07	4	16551·1
6061·11	2	16493·6	6039·74	4	16552·0
6060·75	4	16494·6	6039·39	3	16553·0
6060·45	2	16495·4	6039·02	5	16554·0
6060·11	4	16496·4	6038·63	4	16555·1
6059·80	2	16497·2	6038·33	5	16555·9
6059·42	5	16498·2	6038·02	5	16556·7
6059·15	2	16499·0	6037·73	3	16557·5
6058·81	3	16499·9	6037·39	5	16558·4
6058·50	3	16500·7	6036·98	3	16559·6
6058·17	4	16501·6	6036·79	3	16560·1
6057·83	2	16502·6	6036·48	5	16560·9
6057·48	5	16503·5	6036·19	3	16561·7
6057·23	4	16504·2	6035·82*	6	16562·8
6056·85	4	16505·2	6035·36*	3	16564·0
6056·57	2	16506·0	6034·83*	6	16565·5
6056·29	5⊙	16506·8	6034·45	3	16566·5
6055·95	2	16507·7	6034·13	5	16567·4
6055·62	4	16508·6	6033·89	3	16568·1
6055·38	3	16509·2	6033·61	3	16568·8
6055·05	3	16510·1	6033·40	6 } band	16569·4
6054·77	2	16510·9	6033·05	6 } band	16570·4
6054·41	5	16511·9	6032·87	2	16570·9
6054·21	2	16512·4	6032·57	5	16571·7
6053·89	4	16513·3	6032·34	4	16572·3
6053·61	3	16514·1	6031·92 }	6 band	16573·5
6053·28	5	16515·0	6031·58 }	6 band	16574·4
6052·71 }	4	16516·5	6031·33	2	16575·1
6052·50 }	4	16517·1	6030·99	6	16576·0

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
Group 6031–5992		
6030·99	6	16576·0
6030·60	2	16577·1
6030·20*	3	16578·2
6029·47	4	16580·2
6028·68	4	16582·4
6028·00	4	16584·2
6027·64	2	16585·2
6027·31	4⊙	16586·1
6026·54	4	16588·3
6025·85	3	16590·2
6025·67	2	16590·6
6025·46	2	16591·2
6025·16	3	16592·0
6024·38*	6⊙	16594·2
6023·78	4	16595·9
6023·44	2	16596·8
6023·11	3	16597·7
6022·85	2	16598·4
6022·44	4	16599·5
6021·80	3	16601·3
6021·56	3	16602·0
6021·12	4s	16603·2
6020·85	2	16603·9
6020·38*	6⊙	16605·2
6019·86	4	16606·7
6019·62	3	16607·3
6019·28	4	16608·5
6019·00	3	16609·0
6018·62	4	16610·1
6018·37	8	16610·8
6018·04	4	16611·7
6017·77	4	16612·4
6017·34	4b^r	16613·6
6016·59	3	16615·7
6016·28	3 band	16616·5
6015·99	3	16617·3
6015·70	2	16618·1
6015·45	4	16618·8
6015·05	3	16619·9
6014·83		16620·5
6014·47	4	16621·5
6014·20		16622·3
6014·04	2	16622·7
6013·48	2	16624·3
6013·09	2	16625·3
6012·56	4	16626·8
6012·00*	2	16628·4
6011·59	3s	16629·5
6011·34	2	16630·2
6010·93	2	16631·3
6010·69	3	16632·0
6010·50	2	16632·5
6010·28	2	16633·1
6009·88	4	16634·3
6009·40*	3	16635·6
6008·85*	6	16637·1

Wave-length	Intensity and Character	Oscillation Frequency
6008·55	? band	16637·9
6007·94	4	16639·6
6007·52	4⊙	16640·8
6007·04	5	16642·1
6006·58	4	16643·4
6006·14	5	16644·6
6005·74	4	16645·7
6005·28	5	16647·0
6004·86	4	16648·2
6004·42	5	16649·4
6004·03	4	16650·5
6003·62	5	16651·6
6003·26	4⊙	16652·5
6002·81*	4	16653·8
6002·44	4	16654·9
6002·06	5	16655·9
6001·61		16657·2
6001·28	2	16658·1
6000·96	4	16659·0
6000·57	3	16660·1
6000·25	4	16660·9
5999·93	3	16661·8
5999·61	3	16662·7
5999·31	4	16663·6
5998·97	3	16664·5
5998·63	4	16665·4
5998·38	4	16666·1
5997·77	4	16667·8
5997·47	2	16668·7
5997·23	2	16669·3
5997·00	4	16669·9
5996·74	3	16670·7
5996·52	2	16671·3
5996·12*	5	16672·4
5995·77	2	16673·4
5995·40	5	16674·4
5995·00	3	16675·5
5994·65	6	16676·5
5994·42		16677·1
5993·89	6n	16678·6
5993·03	6	16681·0
5992·60	2	16682·2
5992·30	4	16683·0
Group 5992–5955		
5992·30	4	16683·0
5992·00	2	16683·9
5991·67	4	16684·8
5990·98	4	16686·7
5990·58	2	16687·8
5990·21	4	16688·9
5989·87	2	16689·8
5989·50	5	16690·8
5988·80	5	16692·8
5988·12	4	16694·7
5987·76	2	16695·7
5987·42	4⊙	16696·6

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5986·73	5	16697·6	5961·14	4	16770·2
5986·01	4	16700·6	5960·92	2	16770·9
5985·70	2	16701·4	5960·63	4	16771·7
5985·34*	5	16702·4	5960·33	4	16772·5
5984·71*	4	16704·2	5959·90	4	16773·7
5984·07	4⊙	16706·0	5959·56	4	16774·7
5983·71	2	16707·0	5959·40	2	16775·1
5983·38	4	16707·9	5959·17	3	16775 8
5982·74*	5	16709·7	5958·80	5	16776·8
5982·08*	4	16711·5	5958·37	5	16778·0
5981·65	4	16712·7	5958·00	4	16779·1
5981·40		16713·4	5957·63	2	16780·1
5981·13	2	16714·2	5957·26	4	16781·2
5980·81	4	16715·1	5956·55*	5	16783·2
5980·24	4	16716·7	5956·11	2	16784·4
5979·64*	4	16718·3	5955·78	5s	16785·3
5979·29	2	16719·3	5955·42	4	16786·3
5979·00	4	16720·1	5954·98	4	16787·6
5978·73	2	16720·9			
5978·41	4	16721·8	Group 5955–5917		
5977·87	5	16723·3			
5977·24	5	16725·1	5954·98	4	16787·6
5976·75*	5	16726·5	5954·32*	4	16789·4
5976·11	5	16728·2	5953·52	3⊙	16791·7
5975·60	6	16729·7	5952·79	3	16793·8
5975·05	5	16731·2	5952·40	2	16794·9
5974·53	5	16732·7	5952·09	4	16795·7
5974·00	5	16734·2	5951·41	4	16797·7
5973·49	4	16735·6	5950·73	4	16799·6
5973·00*	4	16737·0	5950·07	5	16801·4
5972·46	5	16738·5	5949·36	5	16802·4
5971·95	4	16739·9	5948·83	6	16804·8
5971·45	5	16741·3	5948·62		16805·5
5970·97	4	16742·6	5948·14	5	16806·9
5970·49	5	16744·0	5947·94		16807·4
5970·00	4	16745·4	5947·35	4	16809·1
5969·58	5	16746·5	5946·75	4	16810·8
5969·11	4	16747·9	5946·08	5	16812·7
5968·71	5	16749·0	5945·42	4	16814·6
5968·22	4	16750·4	5945·14	2	16815·4
5967·83	5	16751·5	5944·79	4	16816·4
5967·37	4	16752·7	5944·18	5	16818·1
5966·97	5	16753·9	5943·87	2	16819·0
5966·52	4	16755·1	5943·57	4	16819·8
5966·16	5⊙	16756·1	5943·29	2	16820·6
5965·71	4	16757·4	5942·92	5	16821·6
5965·35	5	16758·4	5942·32	4	16823·3
5964·96	4	16759·5	5942·04	2	16824·1
5964·54	4	16760·7	5941·75	4	16825·0
5964·17	2	16761·7	5941·21*	5	16826·5
5963·78	4	16762·8	5940·60	4	16828·2
5963·49	3	16763·6	5940·36	2	16828·9
5963·17	3	16764·5	5940·05	4	16829·8
5962·82	4	16765·5	5939·44	5	16831·5
5962·47	3	16766·5	5938·89	4	16833·1
5962·10	5	16767·6	5938·36	5	16834·6
5961·88	5	16768·2	5937·84	3	16836·1
5961·58	3	16769·0	5937·61	3	16836·7

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5937·29	4	16837·6
5936·79	3	16839·0
5936·59	3	16839·6
5936·23	3	16840·6
5935·72	4	16842·1
5935·30	3	16843·3
5934·82*	4	16844·6
5934·55	2	16845·4
5934·30	2	16846·1
5934·07	2	16846·8
5933·90	4	16847·2
5933·35	2	16848·8
5933·00	5	16849·8
5932·53	4	16851·0
5932·11	5	16852·3
5931·45	4	16853·6
5931·24	5	16854·8
5930·80	4	16856·0
5930·40*	5	16857·2
5929·95	4⊙	16858·5
5929·56	5	16859·6
5929·12	3	16860·8
5928·72	4	16862·0
5928·35	3	16863·0
5927·96*	4	16864·1
5927·63	2	16865·1
5927·25	4	16866·1
5927·00	4	16866·8
5926·67	3	16867·8
5926·27	4	16868·9
5925·98	3	16869·7
5925·68	4	16870·6
5925·35	4	16871·5
5925·03	3	16872·4
5924·59*	6	16873·7
5923·98	5	16875·4
5923·67	5	16876·3
5923·40	3	16877·1
5923·08	4s	16878·0
5922·86	4s	16878·6
5922·53	6 band	16879·6
5922·04		16881·0
5921·77	7 band	16881·7
5921·24		16883·2
5921·00	7 band	16883·9
5920·58		16885·1
5920·34	3	16885·8
5920·00	6	16886·8
5919·75	6	16887·5
5919·36	7	16888·6
5919·11	7	16889·3
5918·64	5	16890·7
5918·31	5	16891·6
5917·92	5	16892·7
5917·55	5	16893·8

Group 5917–5881

Wave-length	Intensity and Character	Oscillation Frequency
5917·55	5	16893·8
5917·17	2	16894·9
5916·87	2	16895·7
5916·50	3	16896·8
5916·13	2	16897·8
5915·78	3	16898·8
5915·42	3	16899·9
5915·05	3	16900·9
5914·60	3	16902·2
5914·30	3	16903·0
5914·04	2	16903·8
5913·71	2	16904·7
5913·30	4	16905·9
5913·11	2	16906·5
5912·60	4	16907·9
5912·31		16908·7
5911·95	3	16909·8
5911·70	3	16910·5
5911·48	4	16911·1
5911·22	2	16911·9
5910·57	5	16913·7
5910·32		16914·4
5909·89	4	16915·7
5909·62	2	16916·4
5909·31	5	16917·3
5908·65	4	16919·2
5908·33	2	16920·1
5908·03	4	16921·0
5907·42	5	16922·7
5906·87	4	16924·3
5906·22*	5	16926·2
5905·62	5	16927·9
5905·05	4	16929·6
5904·50*	5	16931·1
5904·02	3	16932·5
5903·97	3	16932·7
5903·45	3	16934·1
5903·24	3	16934·7
5902·96	4	16935·5
5902·71	4	16936·3
5902·44	3	16937·0
5902·17	3	16937·8
5901·84	4	16938·8
5901·56	3	16939·6
5901·31	3	16940·3
5900·91*	5	16941·4
5900·42	5	16942·8
5899·95	5	16944·2
5899·41	5	16945·7
5898·98	5	16947·0
5898·46	5	16948·5
5898·00	5	16949·8
5897·50	5	16951·2
5897·05*	5	16952·5
5896·71	2	16953·5
5896·02	2	16955·5
5895·76	2	16956·2
5895·50	4	16957·0
5895·07	4	16958·2

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5894·65	4	16959·4	5875·24	2	17015·4
5894·22	4	16960·6	5874·86	4	17016·5
5893·83	4	16961·8	5874·47	2	17017·6
5893·43	4	16962·9	5874·22	4	17018·3
5893·07	3	16964 0	5873·61	5	17020 1
5892·77	3	16964 8	5873·28	2	17021·1
5892·40	3	16965·9	5872·94	5	17022·1
5892·08	4	16966·8	5872·39	4	17023·7
5891·72	3	16967·8	5872·02	2	17024·7
5891·35	4	16968·9	5871·74	5	17025·6
5890·97	4	16970·0	5871·35	2	17026·7
5890·15	3	16972·4	5871·16	4	17027·2
5889·86	3	16973·2	5870·57	5	17029·0
5889·54	3	16974·1	5870·14	4	17030·2
5889·23	3	16975·0	5869·88	4	17031·0
5888·84*	4	16976·1	5869·58	3	17031·8
5888·48	3	16977·2	5869·23	3	17032·9
5888·13	4	16978·2	5868·95	2	17033·7
5887·83	4	16979·0	5868·67	3s	17034·5
5887·57	2	16979·8	5868·38	2	17035·3
5887·28	4s	16980·6	5868·05	4	17036·3
5886·95	3	16981·6	5867·77	2	17037·1
5886·75	2	16982·2	5867·49	3	17037·9
5886·45	4	16983 0	5867·23	2	17038·7
5886·13	2	16984·0	5866·91*	6	17039·6
5885·86	5	16984·7	5866·42	5	17041·0
5885·60	5	16985·5	5865·93	5	17042·4
5885·35	2	16986·2	5865·36	4	17044·1
5885·00	6	16987·2	5865·04	3	17045·0
5884·74	6	16988·0	5864·81	4	17045·7
5884·10	6	16989·8	5864·32	4	17047·1
5883·83	2	16990·6	5864·00	2	17048·1
5883·43	4	16991·7	5863·70	3 band	17048·9
5882·77	5	16993·6	5863·44	2	17049·7
5882·23	3	16995·2	5863·22	4	17050·3
5881·91	4	16996·1	5862·69	4	17051·9
5881·71	2	16996·7	5862·26	4	17053·1
5881·42	2	16997·5	5861·76	4	17054·6
5881·17	5	16998·3	5861·33	5	17055·8
			5860·87	4	17057·2
Group 5881–5846			5860·54	3	17058·1
			5860·27	3	17058·9
5881·17	5	16998·3	5859·85	6	17060·1
5880·53	5	17000·1	5859·40	3	17061·4
5880·02	2	17001·6	5859·00	5	17062·6
5879·73*	4	17002·4	5858·60	4	17063·8
5879·09	3	17004·3	5858·28	2	17064·7
5878·75	2	17005·3	5858·08	7	17065·3
5878·54	2	17005·9	5857·63	7	17066·6
5878·18	3	17006·9	5857·30	5	17067·6
5877·68	3	17008·4	5856·91	5	17068·7
5877·48	4	17008·9	5856·49*	6	17069·9
5876·91	3	17010·6	5856·04	4	17071·2
5876·69	3	17011·2	5855·69	4s	17072·2
5876·50	3	17011·8	5855·29*	4	17073·4
5876·18*	3	17012·7	5854·90	4	17074·5
5875·84	2	17013·7	5854·55	3	17075·6
5875·54	4	17014·5	5854·11	5	17076·8

Iodine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5853·78	3	17077·8	5834·79	2	17133·4
5853·53	4	17078·5	5834·49	4	17134·3
5853·13	4	17079·7	5834·24	4	17135·0
5852·92	3	17080·3	5833·87	4	17136·3
5852·17	3	17082·5	5833·32*	5	17137·7
5851·83	4	17083·5	5832·82*	5	17139·2
5851·56 }	5	17084·3	5832·28	4	17140·8
5851·30 }		17085·0	5831·59*	4	17142·8
5851·00	5	17085·9	5831·11	4s	17144·2
5850·76	5	17086·6	5830·56	4s	17145·8
5850·51 }		17087·3	5830·07	5	17147·3
5850·22 }	6	17088·2	5829·52*	5	17148·9
5849·93 }		17089·0	5828·97	4 } band	17150·5
5849·71	2	17089·7	5828·44	5 }	17152·1
5849·37	3	17090·7	5827·93*	5	17153·6
5849·00	2	17091·8	5827·51	4	17154·8
5848·57	7⊙	17093·0	5827·05	4	17156·2
5848·27	2	17093·9	5826·70	3	17157·2
5847·98 }	5 band	17094·7	5826·51	3	17157·7
5847·50 }		17096·1	5826·13	5	17158·9
5847·08	6	17097·4	5825·90	2	17159·5
5846·54	6	17098·9	5825·67	4	17160·2
5846·22	6	17099·9	5825·20	5	17161·6
5845·66*	4	17101·5	5824·68	4 } band	17163·1
			5824·25	5 }	17164·4
Group 5846–5811			5823·83	4	17165·6
			5823·40*	5	17166·9
5845·66*	4	17101·5	5823·00	3 } band	17168·1
5844·90	5	17103·7	5822·63	4 }	17169·2
5844·52	2	17104·9	5822·23	3	17170·1
5844·14	4	17106·0	5821·83	4	17171·5
5843·79	2	17107·0	5821·46	3	17172·6
5843·50	5s	17107·8	5821·07	4	17173·8
5842·74†	4	17110·1	5820·81	3	17174·5
5842·17	4	17111·7	5820·31	4	17176·0
5841·94	4	17112·4	5819·98	4	17177·0
5841·62	3	17113·4	5819·62	4	17178·1
5841·35	4s	17114·1	5819·28	4	17179·1
5841·00	3	17115·2	5818·95	3	17180·0
5840·65	4	17116·2	5818·54	4	17181·2
5840·40	2	17116·9	5818·33	2	17181·9
5840·06	5	17117·9	5817·91	4	17183·1
5839·83	4	17118·6	5817·69	4	17183·7
5839·48	5	17119·6	5817·40	4	17184·0
5839·24	4	17120·3	5817·05	4	17185·6
5838·86	4	17121·4	5816·78	3	17186·4
5838·66	5	17122·0	5816·47	3	17187·4
5838·24	5	17123·3	5816·23	3	17188·1
5838·00	4	17124·0	5816·02	3	17188·7
5837·52	4	17125·4	5815·76	3	17189·5
5837·23	2	17126·2	5815·40	6	17190·5
5836·89	4	17127·2	5815·03	4	17191·6
5836·62	2	17128·0	5814·70*	4	17192·6
5836·29	3	17129·0	5814·24*	4	17193·9
5836·04	3	17129·7	5813·90	5	17194·9
5835·66*	4	17130·7	5813·32	5	17196·7
5835·35	2	17131·8	5813·00	3	17197·6
5835·04	4s	17132·7	5812·66	6	17198·6

Iodine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5812·36	2	17199·5
5811·91	4	17200·8
5811·65	6	17201·6
Group 5811–5778		
5811·65	6	17201·6
5811·33	2	17202·5
5811·03	3	17203·5
5810·77	3	17204·2
5810·30	4	17205·6
5809·63	4	17207·6
5809·24	4	17208·7
5808·89	2	17209·8
5808·51	4	17210·9
5808·26	4	17211·6
5807·92	4	17212·6
5807·66	4	17213·4
5807·32	3	17214·4
5807·05	4⊙	17215·2
5806·69	2	17216·3
5806·50	4	17216·9
5806·24	3	17217·6
5805·86	6⊙	17218·8
5805·63		17219·4
5805·27	4	17220·5
5805·05		17221·2
5804·78	2	17222·0
5804·53	5	17222·7
5804·31		17223·3
5803·98	4s	17224·3
5803·77		17225·0
5803·42	4	17226·0
5803·12	4s	17226·9
5802·72	3	17228·1
5802·45	3	17228·9
5802·08	5s	17230·0
5801·88		17230·6
5801·47*	3	17231·8
5801·02	3	17233·1
5800·77	3	17233·9
5800·38	4	17235·0
5800·11	3	17235·8
5799·83	3	17236·7
5799·63	4	17237·3
5799·22	5	17238·5
5798·69	6	17240·1
5798·45		17240·8
5798·14	6	17241·7
5797·93		17242·3
5797·49*	5	17243·6
5796·97*	5	17245·2
5796·42	3	17246·8
5796·04	3	17247·9
5795·72	3	17248·9
5795·37	3 band	17249·9
5794·87*	4 band	17251·4
5794·41*	4	17252·8
5793·96*	4	17254·1
5793·47	6	17255·6
5793·00	5	17257·0
5792·52*	4	17258·4
5792·02*	4	17259·9
5791·58	4	17261·2
5790·65	3	17264·0
5790·33	3	17264·9
5789·85	4	17266·4
5789·41	4	17267·7
5789·00	4	17268·9
5788·62*	3	17270·0
5787·78	2	17272·6
5787·44	4	17273·6
5787·17	4	17274·4
5786·78	4	17275·5
5786·44	4	17276·6
5786·03	5	17277·8
5785·71	4	17278·7
5785·36	4	17279·8
5785·06	5	17280·7
5784·75	3	17281·6
5784·46	3	17282·5
5784·24	3	17283·1
5783·85	3	17284·3
5783·42	4	17285·6
5783·00	3	17286·8
5782·43	4	17288·5
5781·93*	4	17290·0
5781·45*	4	17291·5
5781·02*	3	17292·7
5780·65	5	17293·8
5780·42*	4	17294·5
5780·09	5 band	17295·5
5779·79	5 band	17296·4
5779·47	5 band	17297·4
5779·18	5 band	17298·3
5778·87	6	17299·2
5778·62	6	17299·9
5778·28	6	17300·9
Group 5778–5746		
5778·28	6	17300·9
5777·93	2	17302·0
5777·61*	4	17302·9
5777·21	2	17304·1
5776·89*	5	17305·1
5776·54	2	17306·2
5776·19	3	17307·2
5775·85	3	17308·2
5775·42	4	17309·5
5775·15	2	17310·3
5774·85	2	17311·2
5774·49	5	17312·3
5774·17	2	17313·3
5773·80	3	17314·4
5773·52	2	17315·2

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5773·14	3	17316·3
5772·84	2	17317·2
5772·52	4	17318·2
5772·26	4	17319·0
5771·93	4	17320·0
5771·63	3	17320·9
5771·24	3	17322·0
5771·02	4	17322·7
5770·67	4	17323·8
5770·34	2	17324·7
5770·04	2	17325·6
5769·75	4s band	17326·5
5769·18	4s	17328·2
5768·85	3	17329·2
5768·59	3	17330·0
5768·25	4s	17331·0
5767·90	2	17332·1
5767·63	2	17332·9
5767·38	4	17333·6
5767·12	4	17334·4
5766·81	2	17335·3
5766·48	4	17336·3
5766·30		17336·9
5765·96	4	17337·9
5765·74	2	17338·6
5765·47	5	17339·4
5765·19		17340·2
5764·85	3	17341·3
5764·63	4	17341·9
5764·35	2	17342·8
5764·08	3	17343·6
5763·68	4	17344·8
5763·07	4s	17346·6
5762·80	3	17347·4
5762·53	3⊙	17348·2
5762·33	2	17348·8
5762·00	3	17349·8
5761·69	5	17350·8
5761·18*	5	17352·3
5760·72*	5	17353·7
5760·26*	4	17355·1
5759·88	4	17356·2
5759·66	2	17356·9
5759·41	3	17357·6
5759·18	3	17358·3
5758·90	4	17359·2
5758·57	3	17360·2
5758·28	3	17361·0
5757·96*	3	17362·0
5757·55*	4	17363·2
5757·29	2	17364·0
5756·94	3s⊙	17365·1
5756·53	3n	17366·3
5755·98*	4	17368·0
5755·51	3	17369·4
5755·09	5 band	17370·7
5754·47	5	17372·5
5754·13	4	17373·6

Wave-length	Intensity and Character	Oscillation Frequency
5753·75	5	17374·7
5753·36	4 band	17375·9
5752·72	3	17377·8
5752·51	2	17378·4
5752·21	4⊙	17379·4
5751·87	4	17380·4
5751·49	3	17381·5
5751·11	3	17382·7
5750·68	5	17384·0
5750·33	4	17385·0
5749·97*	4	17386·1
5749·61	3	17387·2
5749·20	3	17388·5
5748·86	4	17389·5
5748·53	4⊙	17390·5
5748·13	4⊙	17391·7
5747·75	5	17392·8
5747·42	5	17393·8
5747·14	2	17394·7
5746·83	5	17395·6
5746·52	2	17396·6
5746·21	6	17397·5
5745·92	6	17398·4
Group 5746–5715		
5745·92	6	17398·4
5745·65	2	17399·2
5745·39	2	17400·0
5745·04	3	17401·0
5744·66	4	17402·2
5744·41	3	17402·9
5744·02*	3	17404·1
5743·69	3	17405·1
5743·36	4	17406·1
5743·00	4	17407·2
5742·64	3	17408·3
5742·28	5⊙	17409·4
5742·10		17410·0
5741·75	3	17411·0
5741·41	2	17412·0
5741·07	5	17413·1
5740·79	5 band	17413·9
5740·43	2	17415·0
5740·14	3	17415·9
5739·78	4	17417·0
5739·55	2	17417·7
5739·18	3	17418·8
5738·94	2	17419·5
5738·64	3	17420·5
5738·30	3	17421·5
5738·00	2	17422·4
5737·71	3	17423·3
5737·33	4	17424·4
5737·09	4	17425·2
5736·76	3	17426·2
5736·45	2	17427·1
5736·26	4	17427·7

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5735·88	2	17428·8	Group 5715–5684		
5735·64	3	17429·6			
5735·43	3	17430·2	5714·92	6	17492·8
5735·05	4	17431·3	5714·42	3	17494·3
5734·78	4	17432·2	5714·11	4	17495·2
5734·50	2	17433·0	5713·73	3	17496·4
5734·24	2	17433·8	5713·45	3	17497·3
5734·00	2	17434·5	5713·17	3	17498·1
5733·71	2	17435·4	5712·89	3	17499·0
5733·42	3	17436·3	5712·24	6	17501·0
5733·21	3	17436·9	5711·84	2	17502·2
5732·95	3	17437·7	5711·09	4	17504·5
5732·64	2	17438·7	5710·75	3	17505·5
5732·27	3	17439·8	5710·29*	5	17506·9
5731·95	5s ⊙	17440·8	5709·25	4	17510·1
5731·66	5s	17441·6	5708·38*	6	17512·8
5731·40	2	17442·4	5707·92	3	17514·2
5731·13	4	17443·3	5707·33†	5	17516·0
5730·75*	4	17444·4	5706·52	4	17518·5
5730·27*	4	17445·9	5706·17	3	17519·6
5729·92	2	17447·0	5705·85	3	17520·6
5729·67	3	17447·8	5705·52	3	17521·6
5729·46	2	17448·4	5705·24	2	17522·4
5729·24	2	17449·0	5704·87	5	17523·6
5728·84*	3	17450·3	5704·57	2	17524·5
5728·44*	5	17451·5	5704·23	2	17525·5
5727·90*	5	17453·1	5703·89	5s	17526·6
5727·46	3	17454·5	5703·60	2	17527·5
5727·24	3	17455·1	5703·27	4	17528·5
5726·97	3	17456·0	5702·79	5	17530·0
5726·70	3	17456·8	5702·57	3	17530·6
5726·25*	5	17458·2	5702·26	3	17531·6
5725·81*	3	17459·5	5702·04	3 band	17532·3
5725·29*	5	17461·1	5701·19	4	17534·9
5724·64	5	17463·1	5700·61*	5	17536·7
5724·30	2 band	17464·1	5700·16	2	17538·0
5724·10	2	17464·7	5699·60	5	17539·8
5723·75	5	17465·8	5699·19	2	17541·0
5723·17*	4	17467·4	5698·97	2	17541·7
5722·77	4	17468·8	5698·70	6 ⊙	17542·5
5722·37	5 band	17470·0	5698·28*	2	17543·8
5721·91	5	17471·4	5697·84	6s	17545·2
5721·47	3	17472·7	5697·33*	2	17546·7
5721·09*	4	17473·9	5696·92*	4	17548·0
5720·60*	6	17475·4	5696·43	4	17549·5
5719·96	5	17477·3	5696·07*	5	17550·6
5719·40	5	17479·1	5695·61	4	17552·0
5718·98		17480·3	5695·26*	5	17553·1
5718·55	5	17481·7	5694·82	3	17554·5
5718·18	5 ⊙	17482·8	5694·57	3	17555·3
5717·76	5n	17484·1	5694·29	3	17556·1
5717·46	4n	17485·0	5694·00	4 ⊙ band	17557·0
5717·04	5	17486·3	5693·59	4	17558·3
5716·67	3	17487·4	5693·05†	6	17560·0
5716·31*	5	17488·5	5692·53	3	17561·6
5715·85	4	17489·9	5692·21	5	17562·6
5715·45*	6	17491·1	5691·50	5	17564·7
5714·92*	6	17492·8	5691·14	2	17565·9

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5690·81	5s ⊙	17566·9
5690·51	3	17567·8
5690·09*	5	17569·1
5689·67	3	17570·4
5689·20*	5	17571·8
5688·88	2	17572·8
5688·09	3	17575·3
5687·85	3	17576·0
5687·58	3	17576·8
5687·12*	5	17578·3
5686·41*	4	17580·5
5686·02	4	17581·7
5685·63	5	17582·9
5685·09†	6	17584·5
5684·54	6s	17586·2

Group 5684–5655

Wave-length	Intensity and Character	Oscillation Frequency
5684·54	6	17586·2
5684·25	3	17587·1
5683·76	4	17588·7
5683·08*	6	17590·8
5682·35	4	17593·0
5681·80	4	17594 7
5681·18*	3	17596·6
5680·52	5	17598·7
5680·10	3	17600·0
5679·78	4	17601·0
5679·39	5⊙	17602·2
5679·16		17602·9
5678·59	6n	17604·7
5678·02	5	17606·4
5677·62	3	17607·7
5677·30	3	17608·7
5676·82*	6	17610·2
5676·22	3	17612·0
5675·77*	5	17613·4
5675·04*	4	17615·7
5674·58	3	17617·1
5674·00	4	17618·9
5673·57	3	17620·2
5673·23	3s	17621·3
5672·96	3s	17622·1
5672·42	5s	17623·8
5671·95	3	17625·3
5671·43	5s	17626·9
5670·44	4	17630·0
5669·87	4	17631·7
5669·45*	5	17633·0
5669·00	4s	17634·4
5668·47	4n	17636·1
5668·11	4s	17637·2
5667·61	4	17638·8
5667·22	4	17640·0
5666·63*	5	17641·8
5666·34	3	17642·7
5665·90	5	17644·1
5665·50	3	17645·3

Wave-length	Intensity and Character	Oscillation Frequency
5665·02	5	17646·9
5664·74	3	17647·7
5664·38	5	17648·8
5663·94	3	17650·2
5663·61	3	17651·2
5663·38	5	17651·9
5662·58	3	17654·4
5662·22	3s	17655·6
5661·89	4s	17656·6
5661·54	3	17657·7
5661·16	5	17658·8
5660·91		17659·6
5660·66	2	17660·4
5660·38	4	17661·3
5660·04	3	17662·3
5659·76	4	17663·2
5659·46	2	17664·2
5658·98	6⊙	17665·7
5658·17*	5	17668·2
5657·82	2	17669·3
5657·48	4	17670·3
5656·71	4	17672·8
5656·42	3	17673·7
5656·10	5	17674·7
5655·05	4	17678·0
5654·71	4	17679·0

Group 5655–5626

Wave-length	Intensity and Character	Oscillation Frequency
5654·71	4	17679·0
5654·14	4	17680·8
5653·77	2	17682·0
5653·43	5	17683·0
5653·15	2	17683·9
5652·74	5	17685·2
5652·15	5	17687·0
5651·79	2	17688·1
5651·41*	4	17689·3
5650·86	4⊙	17691·1
5650·35*	5	17692·7
5649·94	2	17693·9
5649·61*	6s	17695·0
5649·02	5	17696·8
5648·44	5	17698·6
5648·15	3	17699·5
5647·68*	7	17701·0
5647·21	3s	17702·5
5646·72	6	17704·0
5646·43	2	17704·9
5646·14	6	17705·8
5645·82	3 band	17706·9
5645·50	4	17707·9
5645·01	5	17709·4
5644·77	2	17710·1
5644·49	3	17711·0
5644·14	3	17712·1
5643·83	3	17713·1
5643·63	2	17713·7

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5643·41	4	17714·4
5642·90	5s	17716·0
5642·40	5s	17717·6
5642·15	2	17718·4
5641·91	4	17719·1
5641·33	2	17720·9
5640·90	6	17722·3
5640·48	4	17723·6
5640·00	6	17725·1
5639·53	2	17726·6
5639·15	6	17727·8
5638·64	4 } band	17729·4
5638·23	6	17730·7
5637·79	2	17732·1
5637·36*	6⊙	17733·4
5636·87	4	17735·0
5636·51	4	17736·1
5636·19	3 } band	17737·1
5635·97	4	17737·8
5635·71	4	17738·6
5635·35	3	17739·7
5634·94	3	17741·0
5634·66	4	17741·9
5634·29	4 } band	17743·1
5633·62	4	17745·2
5633·26	2	17746·3
5632·95	5	17747·3
5632·63	4	17748·3
5632·24 }	5	17749·5
5632·00		17750·3
5631·70*	5	17751·2
5631·39	5	17752·2
5631·11	5	17753·1
5630·63*	5	17754·6
5630·34	2	17755·5
5630·04	4	17756·5
5629·82	2	17757·2
5629·64	4	17757·7
5629·31	5	17758·8
5628·90† }	6	17760·1
5628·35†		17761·8
5627·97	6	17763·0
5627·59	2	17764·2
5627·19	6	17765·5
5626·50*	6	17767·6
Group 5626–5599		
5626·50	6	17767·6
5626·00	4	17769·2
5625·67	2	17770·3
5625·30	4	17771·4
5624·95	3	17772·5
5624·18	5	17775·0
5623·84	2	17776·0
5623·50	5	17777·1
5623·15	3	17778·2
5622·85	3	17779·2
5622·56	2	17780·1
5622·23	4	17781·1
5621·94	3	17782·1
5621·68	3	17782·9
5621·36	4	17783·9
5621·00	3	17785·0
5620·59 }	7	17786·3
5620·33		17787·2
5619·84	5	17788·7
5619·59	2	17789·5
5619·32*	4 }	17790·4
5618·76*	4	17792·1
5618·38	3	17793·3
5618·17	2	17794·0
5617·81 }	5	17795·1
5617·54		17796·0
5617·36	2	17796·6
5617·06	5	17797·5
5616·50	6	17799·3
5616·20	2	17800·2
5615·05*	5⊙	17803·9
5614·53	6	17805·5
5614·04	4	17807·1
5613·77	4	17807·9
5613·50	4	17808·8
5613·23	4	17809·7
5613·03	4	17810·3
5612·79	4	17811·1
5612·58	5	17811·7
5612·11	4	17813·2
5611·91	4	17813·8
5611·64	3	17814·7
5611·28	5	17815·8
5610·81	5	17817·3
5610·41	3	17818·6
5610·19	4	17819·3
5609·93	4	17820·1
5609·57	4	17821·3
5609·07*	5	17822·9
5608·74	3	17823·9
5608·36	5	17825·1
5607·94	5	17826·4
5607·67	4	17827·3
5607·35*	5	17828·3
5606·82	5	17830·0
5606·56	4	17830·8
5606·21	4	17832·0
5605·75*	5	17833·4
5605·50	3	17834·2
5605·20	4	17835·2
5604·93	4	17836·0
5604·65	4	17836·9
5604·31	4	17838·0
5604·00	4	17839·0
5603·79	5	17839·6
5603·47	2	17840·7
5602·98	6	17842·2
5602·73	4	17843·0

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5602·44	4	17843·9
5602·24	5	17844·6
5602·06	2	17845·2
5601·81	6	17846·0
5601·30	3	17847·6
5600·95 }	5	17848·7
5600·72 }		17849·4
5600·37*	4	17850·5
5599·97	4s	17851·8
5599·61*	4	17853·0
5599·14	6	17854·5
Group 5599	–5587	
5599·14	6	17854·5
5598·37	5	17856·9
5597·94	3	17858·3
5597·61*	5	17859·3
5597·14	4	17860·8
5596·79	4	17862·0
5596·40	3	17863·2
5596·05	5	17864·3
5595·71	3	17865·4
5595·34	4	17866·6
5594·98	4	17867·7
5594·32	2	17869·9
5594·00	5	17870·9
5593·70	2	17871·8
5593·40	4	17872·8
5593·12	4	17873·7
5592·82	4	17874·6
5592·29	5	17876·3
5592·00	2	17877·3
5591·75	5s	17878·0
5591·51	2	17878·8
5591·23	4	17879·7
5591·04	5	17880·3
5590·82	2	17881·0
5590·56	2	17881·9
5590·03	5	17883·5
5589·57	4	17885·0
5589·26	4	17886·0
5588·98	6⊙	17886·9
5588·49	3	17888·5
5588·19	4	17889·4
5587·91	4	17890·4
5587·56	5	16891·5
Group 5587	–5560	
5587·56	5	17891·5
5586·55	3	17894·7
5586·31	4	17895·5
5586·02	4	17896·4
5585·64	5	17897·6
5585·35	2	17898·6
5585·10	6	17899·4
5584·74	2	17900·5
5584·45	4	17801·4
5584·18	3	17902·3
5583·84	4	17903·4
5583·59	2	17904·2
5583·36	3	17904·9
5583·16	2	17905·6
5582·91	2	17906·4
5582·64	5	17907·2
5582·06	4	17909·1
5581·81	4	17909·9
5581·42	4	17911·2
5581·07	5	17912·3
5580·90	5	17912·8
5580·60	2	17913·8
5580·30	4s	17914·8
5579·64	5	17916·9
5579·21	5	17918·3
5578·59	3	17920·2
5578·29	5	17921·2
5578·01	5	17922·1
5577·63 }	6	17923·3
5577·42 }		17924·0
5577·12	4	17925·0
5576·79	2	17926·0
5576·29	2	17927·6
5576·03	4	17928·5
5575·80	2	17929·2
5575·58	4	17929·9
5575·35	2	17930·7
5575·04	5	17931·7
5574·60	4	17933·1
5574·11	6	17934·6
5573·64	4	17936·2
5573·41	5	17936·9
5572·71	6	17939·1
5572·28	4	17940·5
5571·87	4	17941·9
5571·44	4	17943·2
5571·01	4	17944·6
5570·61	4	17945·9
5570·21	4	17947·2
5569·82*	5	17948·5
5569·46	5	17949·6
5569·06	4	17950·9
5568·74	4	17951·9
5568·32	4	17953·3
5567·97	5	17954·4
5567·66	5⊙	17955·4
5567·27	4	17956·7
5566·93	2	17957·8
5566·57	4	17958·9
5566·29	3	17959·8
5565·69	4	17961·8
5565·38	3	17962·8
5565·10	5	17963·7
5564·81	4	17964·6
5564·52 }	5	17965·5
5564·29 }		17966·3
5563 75	5	17968·0

Iodine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5563·50	4	17968·8
5563·30	3	17969·5
5563·06	5⊙	17970·3
5562·85		17970 9
5562·61	2	17971·7
5562·33*	5s	17972·6
5561·92	3	17973·9
5561·58	4	17975·0
5561·20	2	17976·3
5560·96	4	17977·0
5560·70	2	17977·9
5560·44	6	17978·7
5560·25	6	17979·3
5559·95	5	17980·3
5559·57	4	17981·5
Group 5560–5533		
5559·57	4	17981·5
5559·03	5	17983·3
5558·61	3	17984·6
5558·34	5	17985·5
5557·77	4	17987·4
5557·17*	6	17989·3
5556·87	2	17990·3
5556·54	4	17991·3
5556·04*	5	17992·9
5555·72	2	17994·0
5555·05	2	17996·2
5554·82	4	17996·9
5554·57	4	17997·7
5554·22	4⊙	17998·8
5553·89	3	17999·9
5553·61	6	18000·8
5553·07†	4	18002·6
5552·60	5	18004·1
5552·28	2	18005·2
5551·98	5	18006·1
5551·72	2	18007·0
5551·45	4	18007·9
5551·22	2	18008·6
5550·91	5	18009·6
5550·36	5	18011·4
5550·11	2	18012·2
5549·83	4	18013·1
5549·40	6	18014·5
5548·98	? band	18015·9
5548·36	5	18017·9
5547·92	5	18019·3
5547·68	2	18020·1
5547·41	4s band	18021·0
5546·96	6	18022·4
5546·50	5	18023·9
5546·07	4	18025·3
5545·57	6	18026·9
5545·35	2	18027·7
5545·11	3	18028·4
5544·76	5	18029·6
5544·33	4	18031·0
5543·92	5	18032·3
5543·14	5	18034·8
5542·72	3	18036·2
5542·37	6	18037·4
5542·00	2	18038·6
5541·61	2	18039·8
5541·29	4	18040·9
5540·91	6	18042·1
5540·54	3	18043·3
5540·22	4s	18044·3
5539·90	3	18045·4
5539·57	5	18046·5
5539·27	4	18047·4
5538·96	5	18048·4
5538·65	4	18049·5
5538·39	3	18050·3
5538·07	4s	18051·3
5537·79	3	18052 3
5537·55	3	18053·0
5537·26	3	18054·0
5537·01	3	18054·8
5536·80	5	18055·5
5536·59	5	18056·2
5536·34	2	18057·0
5536·09	5	18057·8
5535·69	2	18059·1
5535·41	5⊙	18060·0
5535·15		18060·9
5534·79*	4	18062·0
5534·33	2	18063·5
5533·93	4	18064·9
5533·68	2	18065·7
5533·37	6	18066·7
5533·20	4	18067·2
5532·85		18068·4
Group 5533–5507		
5532·85	4	13068·4
5532·40	4	18069·8
5532·10	3	18070·8
5531·75	4 band	18072·0
5531·10	6	18074·1
5530·56	5	18075·9
5530·22	4	18077·0
5529·88	5	18078·1
5529·39	5	18079·7
5529 23	2	18080·2
5528 37	2	18083·0
5528·14	4	18083·8
5527·58*	6	18085·6
5526·97*	5	18087·6
5526·64	2	18088·7
5526·38*	6	18089·5
5525·98	4	18090·8
5525·38	5	18092·8
5525·18		18093·5

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5524·86	3	18094·5	Group 5507–5482		
5524·57	2	18095·4			
5524·28	5	18096·4	5506·84	4	18153·7
5524·02	2	18097·2	5506·49	4	18154·9
5523·75	5	18098·1	5506·28	5	18155·6
5523·49	2	18099·0	5505·70	5	18157·5
5523·22	5	18099·9	5505·19	6	18159·2
5522·96	2	18100·7	5504·95	6	18160·0
5522·25	6 } band	18103·0	5504·51	3 }	18161·4
5521·79*	6 }	18104·6	5504·26	3 } band	18162·2
5521·34	6	18106·0	5503·86	5 }	18163·6
5521·08	2	18106·9	5503·42	5 }	18165·0
5520·81	3	18107·8	5503·00	2 } band	18166·4
5520·33*	6	18109·3	5502 72*	4 }	18167·3
5519·86	4	18110·9	5502·43	2	18168·3
5519·46	5	18112·2	5502·13*	3	18169·3
5519·00	4	18113·7	5501·66	3	18170·8
5518·62	5	18114·9	5501·44	3	18171·5
5518·37	2	18115·8	5501·22	3	18172·3
5518·14	4s } band	18116·5	5501·06	3	18172·8
5517·73	4 }	18117·9	5500·78	3	18173·7
5517·30*	4	18119·3	5500·43*	6	18174·9
5516·93	4	18120·5	5499·94*	4	18176·5
5516·55	5n	18121·8	5499·68	2	18177·3
5516·15	4	18123·1	5499·40*	3	18178·3
5515·81*	5	18124·2	5499·14	2	18179·1
5515·44	4	18125·4	5498·80	4	18180·3
5515·03	4	18126·8	5498·32	7	18181·8
5514·35*	4	18129·0	5497·81*	7	18183·5
5514·01	3	18130·1	5497·51† }	6	18184·5
5513·67	3	18131·2	5497·15† }		18185·7
5513·35	4	18132·3	5496·88	2	18186·6
5513·08	3	18133·2	5496·67	3	18187·3
5512·76	4⊙	18134·2	5496·36	6	18188·3
5512·45	3⊙	18135·2	5495·88	4	18189·9
5512·12	3	18136·3	5495·60	2	18190·8
5511·86	2	18137·2	5495·34*	4	18191·7
5511·61	5 } band	18138·0	5495·05† }		18192·7
5511·30	3 }	18139·0	5494·76† }		18193·6
5511·01	4	18140·0	5494·52	4	18194·4
5510·77	4	18140 8	5494·33	4	18195·0
5510·52	4	18141·6	5494·00*	5	18196·1
5510·29	5	18142·4	5493·58*	5	18197·5
5510·11	5⊙	18143·0	5493·24	3	18198·7
5509·91	2	18143·6	5493·05	3	18199·3
5509·67	3	18144·4	5492·75	4	18200·3
5509·44	3	18145·2	5492·42	2	18201·4
5509·17	3	18146·1	5492·25	2	18201·9
5508·95	5	18146·8	5491·93	4 }	18203·0
5508·69	5	18147·6	5491·75	3 } band	18203·6
5508·51	2	18148·2	5491·52	3 }	18204·4
5508·26	4	18149·0	5491·09	5 }	18205·8
5508·03	4	18149·8	5490·78 }	3 band	18206·8
5507·84	3	18150·4	5490·37* }	6	18208·2
5507·63	3	18151·1	5490·00	3	18209·4
5507·37	3	18152·0	5489·67	6	18210·5
5506·84	4	18153·7	5489·29	3	18211·7
			5488·95*	6	18212·9

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5488·55	3	18214·2
5488·14†	4	18215·6
5487·62	4	18217·3
5487·32	2	18218·3
5487·01	4	18219·3
5486·74	3	18220·2
5486·46	3	18221·1
5486·20	3	18222·0
5485·93	3 band	18222·9
5485·27	5	18225·1
5484·93	3	18226·2
5484·70	3	18227·0
5484·48	3	18227·7
5484·22	3	18228·6
5483·95	4	18229·5
5483·27	4	18231·7
5483·00	6 band	18232·6
5482·11*		18235·6
5481·65	5⊙	18237·2
Group 5482	–5457	
5481·65	5	18237·2
5481·38	2	18238·1
5481·05*	3	18239·2
5480·77	3	18240·1
5480·29*	5	18241·7
5479·88	4	18243·0
5479·53	4	18244·2
5479·19	4	18245·3
5478·95	4	18246·1
5478·59	2	18247·3
5478·39	2	18248·0
5478·09	4	18249·0
5477·79	2	18250·0
5477·47	4	18251·1
5476·30	4	18255·0
5476·03	4	18255·9
5475·56	4	18257·4
5475·21	4	18258·6
5475·01	3	18259·3
5474·67	4	18260·4
5474·47	3	18261·1
5473·93	5	18262·9
5473·55*	6	18264·1
5473·12	6 band	18265·6
5472·67		18267·1
5472·43	3	18267·9
5472·24	3	18268·5
5471·85	4s	18269·8
5471·52*	4	18270·9
5471·07*	5	18272·4
5470·75	4	18273·5
5470·48	3	18274·4
5470·15	3	18275·5
5469·96	2	18276·1
5469·77	2	18276·7
5469·45	3	18277·8

Wave-length	Intensity and Character	Oscillation Frequency
5469·15*	4	18278·8
5468·78*	5	18280·1
5468·38*	6	18281·4
5467·95*	2	18282·8
5467·50*	4	18284·3
5467·12	2	18285·6
5466·76	7	18286·8
5466·41	2	18288·0
5465·96	4	18289·5
5465·72	4	18290·3
5465·32*	5	18291·6
5464·82	2	18293·3
5464·51	5	18294·3
5464·24	2	18295·2
5463·90	5	18296·4
5462·90	5	18299·7
5462·58	5	18300·8
5462·25	4	18301·9
5461·98	4	18302·8
5461·71	3	18303·7
5461·50	5	18304·4
5461·18	3	18305·5
5460·76	4	18306·9
5460·44	3	18308·0
5460·12	5	18309·0
5459·81		18310·1
5459·54	3	18311·0
5459·22	4	18312·1
5458·85	5	18313·3
5458·56	5	18314·3
5458·25	3	18315·3
5457·90	6	18316·5
5457·08		18319·2
Group 5457	–5434	
5457·13	5	18319·1
5456·79	2	18320·2
5456·44	3	18321·4
5456·15	2	18322·4
5455·47	2	18324·6
5455·16	4	18325·7
5454·90	4	18326·6
5454·50*	3	18327·9
5454·09	3	18329·3
5453·78	3	18330·3
5453·48	2	18331·3
5453·14	3	18332·5
5452·90	2	18333·3
5452·66	3	18334·1
5452·29	3	18335·3
5452·03	2	18336·2
5451·79	2	18337·0
5451·51	5	18338·0
5451·21	5	18339·0
5450·78	3	18340·4
5450·46	3	18341·5
5450·12	3	18342·6

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5449·55*	5	18344·5
5449·04*	5	18346·3
5448·74	2	18347·3
5448·45	2	18348·3
5448·20	2	18349·1
5447·94	2	18350·0
5447·76	2	18350·6
5447·46	5	18351·6
5446·26	3	18355·6
5445·89	3	18356·9
5445·61	3	18357·8
5445·28*	5	18359·0
5444·83*	4	18360·5
5444·43	3	18361·8
5444·09	4	18363·0
5443·72	3	18364·2
5443·30 }	4 } 6 lines	18365·6
5441·87 }	3 }	18370·5
5441·54 }	3 } 4 lines	18371·6
5440·51* }	5 }	18375·1
5440·07	2	18376·5
5439·67*	5	18377·9
5439·39	5	18378·8
5439·08	4	18379·9
5438·72	5	18381·1
5438·43	6	18382·1
5438·08	3	18383·3
5437·79	3	18384·2
5437·43	4	18385·5
5437·01	3	18386·9
5436·52*	5	18388·5
5436·05	5	18390·1
5435·72	5	18391·2
5435·43	4	18392·2
5435·21	4	18393·0
5434·42	5	18395·6
5434·03*	6	18397·0
5433·58	5	18398·5
Group 5434–5411		
5433·58	5	18398·5
5432·94	3	18400·6
5432·68	2	18401·5
5432·37	3 } band	18402·6
5432·09	2 }	18403·5
5431·82	3 }	18404·4
5431·46 } †	3	18405·7
5431·20 }	2	18406·5
5430·71*	6	18408·2
5430·37	2	18409·4
5429·51	2	18412·3
5429·24	2	18413·2
5428·91	5	18414·3
5428·25*	4	18416·5
5427·79*	3	18418·1
5427·24*	4	18420·0
5426·79*	4	18421·5

Wave-length	Intensity and Character	Oscillation Frequency
5426·40	3	18422·8
5426·13	2	18423·7
5425·76*	6	18425·0
5425·46	2	18426·0
5424·84†	5 ⊙	18428·1
5424·30	5	18429·9
5423·95*	4	18431·1
5423·33*	5	18433·2
5423·05 }	4	18434·2
5422·26 }		18436·9
5422·02	4	18437·7
5421·64	4	18439·0
5421·19*	5	18440·5
5420·90	4	18441·5
5420·31	4	18443·5
5419·78†	6	18445·3
5418·85	6	18448·5
5418·44	4	18449·9
5418·11	4	18451·0
5417·75	4	18452·2
5417·45	4	18453·2
5416·99*	6	18454·8
5416·57	2	18456·2
5416·16*	5	18457·6
5415·11	2	18461·2
5414·66	2	18462·7
5414·28	6	18464·0
5413·71	2	18466·0
5413·40	5	18467·0
5412·91	3	18468·7
5412·31*	6	18470·8
5411·66*	7	18473·0
5410·75	6 band	18476·1
Group 5411–5389		
5410·75	6	18476·1
5410·40	2	18477·3
5409·79		18479·4
5409·47	3	18480·5
5409·16*	4	18481·5
5408·67*	2	18483·2
5408·19*	5	18484·9
5407·63*	4	18486·8
5407·12*	4	18488·5
5406·56*	4	18490·4
5405·91	3	18492·7
5405·38	2	18494·5
5404·96*	6	18495·9
5404·04*	6	18499·1
5403·47*	4	18501·0
5403·02*	4	18502·5
5402·51*	4	18504·3
5401·97*	5	18506·1
5401·53*	3	18507·7
5401·09*	5	18509·2
5400·57	3	18510·9
5400·21*	4	18512·2
5399·74	4	18513·8

Iodine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency	Wave-length	Intensity and Character	Oscillation Frequency
5399·39	2	18515·0	5372·17	2	18608·8
5399·06*	5s	18516·1	5371·47	2	18611·2
5398·21	4	18519·0	5371·03*	4	18612·8
5397·85	2	18520·3	5370·46*	5	18614·7
5396·75	4	18524·0	5369·74*	6	18617·2
5396·35	5	18525·4	5369·20	6	18619·1
5396·09	5	18526·3	5368·86	3	18620·2
5395·67	4	18527·7	5368·51	6	18621·5
5395·44*	5	18528·5	5368·01	7	18623·2
5394·60*	4	18531·4	5367·42	5	18625·3
5394·12	4	18533·1			
5393·91	4 band	18533·8	Group 5367–5347		
5393·44	6 band	18535·4			
5392·70	5	18537·9	5367·42	5	18625·3
5392·09*	5	18540·0	5366·94	4	18626·9
5391·35*	5	18542·6	5366·43	4	18628·7
5390·85	6	18544·3	5365·76	5⊙	18631·0
5390·21†	7s	18546·5	5364·76*	6	18634·5
5389·57	4	18548·7	5364·15	4	18636·6
5389·01*	8	18550·6	5363·67	4	18638·3
			5362·61	4	18642·0
			5362·09	3	18643·8
Group 5389–5367			5361·64*	5	18645·3
5389·01*	8	18550·6	5361·05	5	18647·4
5388·43	4	18552·6	5360·64	4	18648·8
5387·84*	4	18554·7	5360·19	5	18650·4
5387·21*	4	18556·8	5359·70	3	18652·1
5386·66	5	18558·7	5359·45	3	18653·0
5386·00*	4	18561·0	5359·22	3	18653·8
5385·50	4	18562·7	5358·81	6	18655·2
5385·00	5	18564·4	5358·36	3	18656·7
5384·36*	3	18566·6	5357·91	6	18658·3
5383·83	5	18568·5	5357·50	2	18659·7
5383·38	5	18570·0	5357·09*	4	18661·2
5382·92	4	18571·6	5356·63	6	18662·8
5382·43*	4	18573·3	5356·26	2	18664·1
5381·90	6	18575·1	5355·89	6	18665·3
5381·37	3	18577·0	5355·53	2	18666·6
5380·93	6	18578·5	5355·14	5	18668·0
5380·35	4	18580·5	5354·81	2	18669·1
5379·94	5	18581·9	5354·42	5	18670·5
5379·53	5	18583·3	5354·11	4	18671·6
5378·99	3	18585·2	5353·28*	6	18674·4
5378·58*	5	18586·6	5352·81	3	18676·1
5378·05*	6	18588·4	5352·46	5	18677·3
5377·32	6	18591·0	5352·23	4	18678·1
5376·98	5	18592·1	5351·90	4	18679·3
5376·55	5	18593·6	5351·64	4	18680·2
5376·13	5	18595·1	5351·37	4	18681·1
5375·85	5	18596·1	5351·10	4	18682·1
5375·20	6	18598·3	5350·87	2	18682·8
5374·75	2	18599·9	5350·56*	6	18683·9
5374·38	6	18601·1	5349·87	6⊙	18686·3
5373·73	4	18603·4	5349·28	4	18688·4
5373·38	4	18604·6	5348·70*	5s	18690·4
5373·11	4	18605·5	5348·42	2	18691·4
5372·78	2	18606·7	5348·06	6	18692·7
5372·43	4	18607·9	5347·33*	7	18695·1

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
Group 5347–5327		
5347·35*	7	18695·1
5346·79	3	18697·1
5346·24*	6	18699·0
5345·65*	4	18701·3
5345·17	4	18702·8
5344·71	5	18704·4
5344·04	5	18706·7
5343·56	4	18708·4
5343·12*	6	18709·9
5342·45*	5	18712·3
5342·01	4	18713·8
5341·43	6	18715·9
5340·93*	4	18717·6
5340·54	2	18719·0
5340·14*	6	18720·4
5339·62	3	18722·2
5339·37	3	18723·1
5339·11	3	18724·0
5338·67	4	18725·6
5338·24	4	18727·1
5337·84	4	18728·5
5337·45	3	18729·8
5337·09*	5⊙	18731·1
5336·56*	5 } band	18733·0
5336·24	3	18734·1
5335·81	4	18735·6
5335·45	3	18736·9
5335·10	4	18738·1
5334·76	3	18739·3
5334·42	4	18740·5
5334·07	2	18741·7
5333·73	6	18742·9
5333·39	3	18744·1
5333·10	6⊙	18745·1
5332·73	2	18746·4
5332·41	3	18747·5
5332·15	2	18748·5
5331·76	4 } band	18749·8
5331·41	2	18751·1
5330·97	6s	18752·6
5330·84	2	18753·1
5330·53	5 } band	18754·2
5330·18	4	18755·4
5329·80	3	18756·7
5329·32*	6⊙	18758·4
5327·96	4	18763·2
5327·76	2	18763·9
5327·47	5	18764·9
Group 5327–5308		
5327·47	5	18764·9
5326·94	5	18766·8
5326·39	4	18768·7
5326·06	3	18769·9
5325·76	4	18770·9
5325·26	5	18772·7
5324·74	3	18774·5
5324·13	3	18776·7
5323·70	4	18778·2
5323·16	4	18780·1
5322·64	3	18781·9
5322·17*	5	18783·6
5321·68	4 } band	18785·3
5321·41	4	18786·3
5321·15	4	18787·2
5320·72	5	18788·7
5320·29	3	18790·2
5319·84	4	18791·8
5319·38*	5	18793·5
5318·94	3	18795·0
5318·55*	5	18796·4
5318·16	2	18797·8
5317·74*	4	18799·3
5317·37	3	18800·6
5316·55	4	18803·5
5316·18	2	18804·8
5315·79	4	18806·1
5315·44	2	18807·4
5315·13	4	18808·5
5314·78	2	18809·7
5314·49*	5	18810·7
5314·17	2	18811·9
5313·87*	5	18812·9
5313·55	2	18814·1
5313·28 }	5	18815·0
5313·02		18815·9
5312·55*	4	18817·6
5312·19	2	18818·9
5311·85	3	18820·1
5311·65	2	18820·8
5311·32*	4	18822·0
5310·89 } †	4	18823·4
5310·67	4	18824·3
5310·40	2	18825·3
5310·08	4	18826·4
5309·75	2	18827·5
5309·43	3	18828·7
5309·23	2	18829·4
5308·93	5	18830·4
5308·36	5	18832·5
Group 5308–5291		
5308·36	5	18832·5
5307·88	3	18834·2
5307·28	4	18836·3
5306·76*	4	18838·1
5306·21	4	18840·1
5305·73	4 } band	18841·8
5305·14*	5	18843·9
5304·62*	4	18845·8
5304·18	4	18847·3
5303·68*	5	18849·1

Iodine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5303·18	4	18850·9
5302·26	4	18854·2
5301·78	3	18855·9
5301·41	4	18857·2
5300·96*	4 } band	18858·8
5300·50	3	18860·4
5300·14	3	18861·7
5299·75	3 } band	18863·1
5299·31*	3	18864·6
5298·96	3 } band	18865·9
5298·62	4⊙	18867·1
5298·18	3	18868·7
5297·80*	4⊙	18870·0
5297·49	2	18871·1
5297·14	4⊙	18872·4
5296·82	3 } band	18873·5
5296·47	3	18874·8
5296·10	4	18876·1
5295·83	2	18877·0
5295·51	3	18878·2
5295·23	3	18879·2
5294·92	3	18880·3
5294·67	3	18881·2
5294·36 }	5	18882·3
5294·18		18882·9
5293·93	2	18883·8
5293·56	5	18885·1
5293·07	5	18886·9
5292·76	2	18888·0
5292·60	2	18888·6
5292·41 }	4	18889·2
5292·21		18889·9
5291·90	4	18891·1
5291·70	2	18891·8
5291·35	3	18893·0
5291·12	4	18893·8
5290·72	6	18895·3

Group 5291–5273		
5290·72	6	18895·3
5289·63	4	18899·1
5289·06	5	18901·2
5288·53*	3	18903·1
5287·97	4	18905·1
5287·45*	4	18906·9
5286·86*	3	18909·1
5286·43	4	18910·6
5285·92	4	18912·4
5285·15	3 } band	18915·2
5284·94	2	18915·9
5284·52	4	18917·4
5284·03	4⊙ } band	18919·2
5283·60	4	18920·7
5283·13	4	18922·4
5282·70	4	18923·9
5282·18*	5	18925·8
5281·89	2	18926·8
5281·53*	4	18928·1
5281·13	3	18929·6
5280·72	4	18931·0
5280·32	4	18932·5
5279·97	3	18933·7
5279·63	3	18934·9
5279·29	3	18936·2
5278·96	3	18937·3
5278·60	3	18938·6
5278·30	3	18939·7
5277·96	3	18940·9
5277·63	3	18942·1
5277·32	3	18943·2
5276·97 }	4 } band	18944·5
5276·78	4	18945·2
5275·60*	5	18949·4
5275·16	4⊙	18951·0
5274·77	2	18952·4
5274·34	4	18953·9
5273·98	3	18955·2
5273·15	4	18958·2
5272·75*	5	18959·6

Group 5273–5255		
5272·75*	5	18959·6
5272·30	2	18961·3
5272·05	2	18962·2
5271·64*	4	18963·6
5271·28	3	18964·9
5271·00	2	18965·9
5270·15	2	18969·0
5269·44	2	18971·6
5268·98	3 } band	18973·2
5268·60	5	18974·6
5268·22*	2	18976·0
5267·62*	3	18978·1
5267·27	3	18979·4
5266·38*	3 band	18982·6
5265·49	3⊙	18985·8
5265·09	3⊙	18987·3
5264·50*	4	18989·4
5263·61	5⊙	18992·6
5263·17	4	18994·2
5262·83	3	18995·4
5262·13	4	18997·9
5261·85	3	18998·9
5261·55	3	19000·0
5261·20	3	19001·3
5260·93	3	19002·3
5260·61	3	19003·4
5260·29	3	19004·6
5259·85*	4	19006·2
5259·37*	4	19007·9
5259·02	2	19009·2
5258·61	4	19010·6
5258·22	4	19012·1
5257·91	2	19013·2

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5257·40*	4	19015·0
5257·07	4	19016·2
5256·68	4	19017·6
5256·27	4	19019·1
5255·89	3	19020·5
5255·71	2	19021·1
5255·32	4⊙	19022·5

Group 5255–5240

Wave-length	Intensity and Character	Oscillation Frequency
5255·32	4	19022·5
5254·80*	3	19024·4
5254·38	3	19025·9
5253·59	3	19028·8
5253·24*	4	19030·1
5252·85	3	19031·5
5252·58	2 } band	19032·5
5252·11*	4 } band	19034·2
5251·72	3 } band	19035·6
5251·42	2	19036·7
5251·01	5⊙	19038·2
5250·29*	2s	19040·8
5249·88	2	19042·2
5249·60	2	19043·3
5249·30	4 } band	19044·3
5248·92	4 } band	19045·7
5248·63	2	19046·8
5248·26	3	19048·1
5247·90	3⊙	19049·4
5247·57	2	19050·6
5247·27	3⊙	19051·7
5246·91	2	19053·0
5246·66	2	19053·9
5246·35	3	19055·1
5245·97	3	19056·4
5245·58	2	19057·9
5245·29	2	19058·9
5245·03	4	19059·8
5244·71	4	19061·0
5244·38	2	19062·2
5244·00	4⊙	19063·6
5243·69	4	19064·7
5243·11	3	19066·8
5242·51	3	19069·0
5242·23	2	19070·0
5241·76*	3	19071·7
5241·32	2	19073·3
5241·09	3	19074·2
5240·78	3	19075·3
5240·46	3	19076·5
5240·02†	5	19078·1

Group 5240–5224

Wave-length	Intensity and Character	Oscillation Frequency
5240·02†	5	19078·1
5239·81	3	19078·8
5239·46	2	19080·1
5239·15	3	19081·2
5238·94	2	19082·0
5238·70	2	19082·9
5238·35*	3	19084·1
5237·93	2	19085·7
5237·64	3 } band	19086·7
5237·15	3 } band	19088·5
5236·90	2	19089·4
5236·51	4	19090·9
5236·19	4	19092·0
5235·71*	3	19093·8
5235·23*	2	19095·5
5234·82	3⊙	19097·0
5234·44	2	19098·4
5234·15	3	19099·5
5233·74	3	19101·0
5233·16	4	19103·1
5232·74	3	19104·6
5232·48	2	19105·6
5232·16	3	19106·8
5231·85	2	19107·9
5231·49	2	19109·2
5231·12	2	19110·6
5230·80	2	19111·7
5230·51	2	19112·8
5229·65	4	19115·9
5229·32	2	19117·1
5229·00	3	19118·3
5228·71	3	19119·4
5228·44	3	19120·3
5228·16	2	19121·4
5227·86	2	19122·5
5227·52	4	19123·7
5227·18	5	19125·0
5226·34*	5	19128·0
5225·84	3	19129·9
5225·38*	4	19131·5
5225·07	2	19132·7
5224·69	2	19134·1
5224·42	2	19135·0
5224·10*	5	19136·2

Group 5224–5209

Wave-length	Intensity and Character	Oscillation Frequency
5224·10*	5 } band	19136·2
5223·54	4 } band	19138·3
5223·09*	2 } band	19139·9
5222·65	4	19141·5
5222·10	4	19143·5
5221·70	3	19145·0
5221·41	2	19146·1
5221·13*	4	19147·1
5220·48*	3	19149·5
5220·00	5	19151·2
5219·67	3	19152·5
5219·32	4	19153·7
5218·92	4	19155·2
5218·51	3	19156·7
5218·22	3	19157·8

IODINE (ABSORPTION)—*continued*

Wave-length	Intensity and Character	Oscillation Frequency
5217·80*	4	19159·3
5217·24	4	19161·4
5216·92	4 band	19162·6
5216·50	4	19164·1
5215·83	6	19166·6
5215·10	2 band	19169·2
5214·77	4	19170·4
5214·48	2	19171·5
5213·95*	4	19173·5
5213·48	2	19175·2
5213·22*	3	19176·1
5212·85	2	19177·5
5212·50	3	19178·8
5212·23	3 band	19179·8
5211·95	3	19180·8
5211·64	3	19182·0
5211·41	3	19182·8
5211·08*	3	19184·0
5210·55*	2	19186·0
5210·03	4	19187·9
5209·80	3	19188·7
5209·46*	6	19190·0
Group 5209–5195		
5209·46*	6	19190·0
5208·38	4	19194·0
5208·01*	4	19195·3
5207·57	4	19196·9
5206·93		19199·3
5206·58	4	19200·6
5205·97	3	19202·8
5205·64	3	19204·1
5205·22*	4	19205·6
5204·35	3	19208·8
5203·92	4	19210·4
5203·51	2	19211·9
5203·21	4	19213·0
5202·36	4	19216·2
5202·00	2	19217·5
5201·61	4	19218·9
5201·30	4	19220·1
5201·00	2	19221·2
5200·71	5	19222·3
5200·51	3	19223·0
5200·02	4	19224·8
5199·46	4	19226·9
5199·17	2	19228·0
5198·94	4	19228·8
5198·42	5	19230·8
5198·16	2	19231·7
5197·80*	4⊙	19233·1
5197·29*	3	19234·9
5196·92	3	19236·3
5196·63	4 band	19237·4
5196·31	3⊙	19238·6
5196·09	3	19239·4
5195·74	4⊙	19240·7
5195·22	4⊙	19242·6
Group 5195–5182		
5195·22	4	19242·6
5194·73*	4	19244·4
5194·28	2	19246·1
5194·00	4	19247·1
5193·67*	3	19248·3
5193·25*	5	19249·9
5192·68	5	19252·0
5192·30	4	19253·4
5191·35	5	19256·9
5190·94	3	19258·5
5190·54		19259·9
5190·10	4 band	19261·6
5189·75		19262·9
5189·35	5	19264·4
5188·64	4	19267·0
5188·18	5	19268·7
5187·84	3	19270·0
5187·44	5	19271·5
5187·24	3	19272·2
5186·88	3	19273·5
5186·56	4	19274·7
5186·24	4	19275·9
5185·94	2	19277·0
5185·69	3	19278·0
5185·40	2	19279·0
5185·06*	4	19280·3
5184·52	3	19282·3
5183·38	5	19286·5
5182·91	5	19288·3
5182·42	3	19290·1
5181·96*	6	19291·8
Group 5182–5168		
5181·96	6	19291·8
5181·70	2	19292·8
5181·44	3	19293·8
5180·91*	4	19295·7
5180·37*	3	19297·8
5179·96	4	19299·3
5179·41*	5	19301·3
5179·00	3	19302·9
5178·61	5	19304·3
5178·24	2	19305·7
5178·00	3	19306·6
5177·72	3	19307·6
5177·32	3	19309·1
5176·90	4	19310·7
5176·52	3	19312·1
5176·07	4	19313·8
5175·75	3	19315·0
5175·37	4	19316·4
5175·00	4	19317·8

IODINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency
5174·66	3	19319·0
5174·38	3	19320·1
5174·10	5	19321·1
5173·63	4	19322·9
5172·49	3	19327·1
5172·16	3	19328·4
5171·43*	4	19331·1
5171·13	2	19332·2
5170·80	4	19333·5
5170·32*	2	19335·2
5169·95	2	19336·6
5169·62	3	19337·9
5168·65*	5	19341·5
Group 5168	–5156	
5168·65*	5	19341·5
5168·27	3	19342·9
5167·17*	3	19347·0
5166·85	3	19348·2
5166·43	3	19349·8
5166·21	2	19350·6
5165·87*	3	19351·9
5165·51	2	19353·3
5165·15	4	19354·6
5164·91	2	19355·5
5164·63	4s	19356·6
5164·26	2s	19358·0
5163·90	4s	19359·3
5163·58	2	19360·5
5163·22	2	19361·9
5162·90	2	19363·1
5162·43	5	19364·8
5162·14	4	19365·9
5161·81	2	19367·1
5161·45	6	19368·5
5161·16	2	19369·6
5160·82	3	19370·9
5160·47	4	19372·2
5160·26	4	19373·0
5160·00	4	19373·9
5159·71	4	19375·0
5159·36	5⊙	19376·3
5159·10	5	19377·3
5158·74	3	19378·7
5158·43	3	19379·8
5158·10	3	19381·1
5157·72	4	19382·5
5157·42	2	19383·6
5156·98	5	19385·3
5156·61	3	19386·7
5156·16*	5	19388·4
Group 5156	–5145	
5156·16*	5	19388·4
5155·66	3	19390·2
5155·16*	4	19392·1
5154·73	3	19393·7
5154·36	5	19395·1
5153·83	4	19397·1
5153·53	4	19398·3
5153·01	4	19400·2
5152·62	4 band	19401·7
5151·79	5	19404·8
5151·48	2	19406·0
5151·15	4⊙	19407·2
5150·80	2	19408·5
5150·45	5	19409·9
5150·05	4	19411·4
5149·76	4	19412·5
5149·41	3	19413·8
5149·13	2	19414·8
5148·82	3	19416·0
5148·26	4	19418·1
5148·00	3	19419·1
5147·74	2	19420·1
5147·47	3	19421·1
5147·16	3	19422·3
5146·74	5	19423 8
5146·10	3	19426·3
5145·59	4	19428·2
5145·25	4	19429·5
5144·71*	5	19431·5

ERRATA.

The following *errata* in the Index have been observed:—

P. 28. *Opposite* 5165·5 *under* 'Osc. Freq.' *interpolate* 19356 abc.
P. 101. *Erase* 3730, 3724, 3720.
P. 144. *For* Thalen *read* Hartley and Adeney.
P. 175. Magnesium Oxide, *under* Liveing and Dewar, *substitute* 5006·4, 4995·6, 4985·4, 4973·6, 4961·6, 4948·6, 4934·4; *and add* 3730, 3724, 3720.

The following additions are noted:—

Pp. 27, 28. Kayser and Runge ['Wied. Ann.' xxxviii. 80] give the following measurements of the leading lines of the Carbon band spectrum 5635·43, 5585·50, 5540·86—5165·30, 5129·36—4737·18, 4715·31, 4697·57, 4684·94—4381·93, 4371·31, 4365·01; and (pp. 167, 168) of the Cyanogen spectrum 4381·93, 4371·31, 4365·01—4216·12, 4197·24, 4180·98, 4167·77, 4156·67, 4152·88—3883·55, 3871·54, 3861·86, 3855·06—3590·48, 3585·95, 3584·06.

P. 101. Magnesium Flame spectrum *add* 3633·7, 3626·2, 3620·6.

P. 101. Magnesium Arc spectrum *add* 4481, 3895, 3893, 3855, 3848, 3073·5, 3050·6, 3046·7, 2797, 2789·9.

P. 121. Deslandres obtains for the Potassium red lines the wave-lengths 7696·3 and 7663·0 when $D_2 = 5888·9$.

On the Telluric lines of the solar spectrum (p. 186) see an important paper by L. Becker, 'Phil. Trans. Edin.' xxxvi. Part I. No. 6.

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APPENDIX C.

Iron (Arc Spectrum).[1]

(† denotes one of Rowland's 'normal' lines, or one of Müller and Kempf's '300' lines, as the case may be. Rowland's values are given at the foot of the page.)

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ+	$\frac{1}{\lambda}$−	
6750·36	48·6		2		1·76	1·97	4·3	14809·7
6708·04			2			1·96	4·4	14903·1
†6678·14	76·9		8	†6678·36	1·24			14969·8
6668·18	66·6		1		1·58			14992·2
6665·58			1					14998·0
†6663·60	62·3		6	†6663·74	1·30	1·96		15002·5
6654·30	52·8		1		1·50	1·95		15023·5
6647·69	45·7		1		1·99			15038·4
6644·85			1					15044·8
6640·13	38·4		4		1·73			15055·5
†6633·90	32·7		6n	†6634·14	1·20			15069·7
6627·77	26·5		4		1·27	1·95		15083·6
6614·05			1n			1·94		15114·9
6611·94			1					15119·8
†6609·25	08·7		6	†6609·50	0·55			15125·9
6608·06			1				4·4	15128·6
6605·34	04·2		1		1·14		4·5	15134·8
6597·93	96·8		4n		1·13			15151·8
6594·00	94·3		6		−0·3			15160·8
†6593·07	92·2		10	†6593·61	0·87			15162·9
6591·79			1			1·94		15165·9
6586·14			1			1·93		15178·9
6584·80			2					15182·0
6581·45	80·3		2		1·15			15189·7
6577·83			1					15198·1
6575·19	74·0		6	†6575·27	1·19			15204·2
6572·87			1					15209·5
6571·33			1					15213·1
6569·36	68·2		8n		1·16			15217·7
6556·92	55·6		1		1·32	1·93		15246·6
†6546·40	45·1		10	†6546·66	1·30	1·92		15271·1
6544·14			1					15276·3
6538·77			1					15288·9
6534·07	33·0		2n	†6534 30	1·07			15299·9
6528·81	27·7		1		1·11			15312·2
6523·59			1			1·92		15324·5
6518·51	17·3		6		1·21	1·91		15336·4
6515·95			1					15342·4
6510·15	08·3		1		1·85			15356·1
6507·43			1					15363·4

6678·223 6663·681 6633·974 6609·335 6593·149 6546·478

[1] Kayser and Runge (Berlin, 1888); Thalén (Upsala, 1884); Müller and Kempf (Potsdam, 1886).

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Ångström	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
6504·38	03 3		2		1·08			15369·7
6501·77	00·7		2		1·07			15375·9
6499·13	98·3		2		0·83			15382·2
6496·68	96·1		2		0·58			15388·0
6495·13	94·2		10		0·93			15391·6
6494·09			1					15394·1
6492·81			1					15397·1
6490·60			1					15402·4
6488·39			2					15407·6
6486·08			2			1·91		15413·1
6483·93			1			1·90		15418·2
6481·97	81·0		4		0·97			15422·9
6475·73	74·8		4	†6475·91	0·93			15437·8
6471·58			1					15447·7
6469·40	68·5		4		0·90			15452·9
†6462·76	61·7		4	†6462·95	1·06			15468·8
6457·19			1					15482·1
6456·51	55·2		1		1·31			15483·7
6450·08			1	†6450·18		1·90		15499·2
6439·24			1	†6439·38		1·89		15525·3
6436·79			1					15531·2
6433·42			1					15539·3
6432·85			1					15540·7
†6430·99	30·1		8	†6431·12	0·89			15545·2
6426·75			1					15555·5
6421·52	20·6		8	†6421·72	0·92			15568·1
6420·23	19·2		6n		1·03			15571·3
6417·24			1					15578·5
6414·23			1			1·89		15585·8
6411·83	10·9		8	†6411·98	0·93	1·88		15591·7
6411·18			1				4·5	15593·2
6408·25	07·1		6	†6408·35	1·15		4·6	15600·3
6404·98			1					15608·2
6402·74			1					15613·7
6400·13	99·1		10	†6400·35	1·03			15620·1
6399·68			1					15621·2
6398·30			1					15624·5
6396·22			1					15629·6
6393·83			1	†6393·92				15635·5
6393·63	92·6		8		1·03			15636·0
6392·96			1					15637·6
6391·50			1					15641·2
6389·51			1					15646·0
6387·44			1					15651·1
6386·28			1n					15654·0
6385·00			2					15657·1
6383·57			1					15660·6
6382·37			1					15663·6
†6380·89	79·7	79·5	6	†6381·13	1·19			15667·2
6379·32			1			1·88		15671·1
6378·16			1			1·87		15673·9
6376·09	75·0	73·5	1		1·09			15679·0
6373·89			1					15684·4
6371·60			1					15690·0
6369·79			1					15694·5

†6462·840 6431·065 6380·957

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Ångström	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
6367·53			1					15700·1
6364·69	63·5	62·7	2n		1·19			15707·1
6363·01	61·2	60·6	2		1·81			15711·2
6361·90			1					15714·0
6361·01			1					15716·2
6360·20			1					15718·2
†6358·83	57·7	57·3	4	†6358·99	1·13			15721·6
6357·61			1					15724·6
6356·39			1					15727·6
6355·16	54·0	54·0	4	†6355·46	1·16	1·87		15730·6
6345·86			1			1·86		15743·7
6344·28	43·2	44·0	4	†6344·50	1·08			15747·6
6341·73	41·0		1		0·73			15764·0
6339·17	38·0	38·0	2n	†6339·33	1·17			15770·3
†6336·97	35·9	36·0	10		1·07			15775·8
6335·43	34·3	34·3	8	†6335·72	1·13			15779·6
6334·62			1					15781·7
6333·49			1					15784·5
6331·04	30·5	29·0	2n		0·54			15790·6
6328·93			2n					15795·8
6326·84			2n					15801·1
6324·60			1					15806·7
†6322·83	21·6	21·6	6	†6323·06	1·23			15811·1
6321·78			1					15813·7
6320·42			1					15817·1
6318·16	16·9	17·4	10	6318·41	1·26			15822·8
6317·27			1					15825·0
6315·92			2					15828·4
6315·42	13·9	13·4	4	†6315·46	1·52			15829·7
6311·62	11·0		2		0·62			15839·2
6310·59	09·5	09·1	1		1·09			15841·8
6309·53			1			1·86		15844·4
	06·0	05·7				1·85		
6302·65	01·6	02·0	6	†6302·84	1·05			15861·7
6301·61	00·7	00·5	10		0·91			15864·4
6300·60			1					15866·9
6299·31			1					15870·2
6297·90	96·9	97·0	6	†6298·24	1·00			15873·7
6296·67			1					15876·8
6293·94	93·0		2		0·94			15883·7
6292·88	92·0		1		0·88			15886·4
6291·10	90·2		6n	†6291·33	0·90			15890·9
6288·67	88·0		1		0·67			15897·0
6285·23	84·5		2n		0·73			15905·7
6283·17	81·6		2n		1·57			15910·9
6280·74	79·6		4		1·14			15917·1
6280·06			1					15918·8
6277·61	76·6		1n	†6277·95	1·01			15925·0
6274·10			1n			1·85		15933·9
6271·49	69·9		2		1·59	1·84		15940·6
6270·39	69·1	69·2	6		1·29			15943·4
6269·26			1				4·6	15946·2
6267·97			1				4·7	15949·4
†6265·27	64·1	64·0	8	†6265·48	1·17			15956·3
6264·28			1					15958·8

†6358·907 6337·044 6265·348

IRON (ARC SPECTRUM) - *continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ+	$\frac{1}{\lambda}$—	
6263·31			1n					15961·3
6261·26			2n					15966·5
6258·87			2n					15972·6
6256·52	55·3	55·1	6	†6256·66	1·22			15978·6
6254·40	53·2	53·0	6		1·20			15984·0
†6252·71	51·5	51·2	10	†6253·00	1·21			15988·4
6251 90			1					15990·4
6250 56			1n					15993·9
6248·85			1n					15998·2
6247·68			1					16001·2
6246·48	45·4	45·4	8	†6246·72	1·08			16004·3
6245·69			1					16006 3
6244·20			1n					16010·2
6243·06			1n					16013·1
6241·73			1					16016·5
6240·77	39·2	39·0	4	†6240·93	1·57			16019·0
6240·47			1					16019·7
6239·54			1			1·84		16022·1
6238 53			1			1·83		16024·7
6237·44			1n					16027·5
6235·26			1					16033·1
6232·83	31·5	31·5	6		1·33			16039·4
6231·76			1					16042·1
†6230·88	29·7	29·5	10	†6231·14	1·18			16044·4
6230·16			1					16046·2
6229·34			1					16048·4
6228·72			1					16050·0
6227·78			1					16052·4
6226·95	25·4	25·3	2		1·55			16054·5
6224·42			1n					16061·1
6222·31			1n					16066·5
6221·57			1					16068·4
6220·93	19·7	20·0	1		1·23			16070·1
†6219·42	18·3	18·2	8	†6219·61	1·12			16074·0
6218·51			1					16076·3
6217·81			1					16078·1
6216·49			1n					16081·5
6215·29	14·1	15·0	6		1·19			16084·6
†6213·57	12·3	12·4	8	†6213·78	1·27			16089·1
6211·25			1n					16095·1
6209·11			1n					16100·7
6206·98			1n					16106·2
6204·98			1n			1·83		16111·4
6202·59			1			1·82		16117·6
†6200·46	99·6	99·2	6	†6200·71	0·86			16123·1
6199·61			1					16125·3
6196·24			1					16134·1
6193·89			1					16140·2
6191·70	90·5	90·7	10	†6191·84	1·20			16145·9
6190·84			1					16148·2
6190·35			1				4·7	16149·5
6189·54			1				4·8	16151·6
6188·25	87·1	86·9	4		1·15			16155·0
6187·42			1					16157·1
6185·90	85 3	85·6	2		0·60			16161·1

†6252·780 6230·944 6219·494 6213·648 6200·533

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
6183·15	83·0		2		0·15			16168·3
†6180·34	79·3	79·2	6	†6180·56	1·04			16175·6
6178·80			1					16179·7
6173·48	72·3	72·3	4		1·18			16193·6
6172·60			1					16195·9
6170·62	69·4	69·8	6n	†6170·85	1·22			16201·1
6169·77			1			1·82		16203·4
6168·18			1			1·81		16207·5
6166·80			1					16211·1
6165·51	63·8	63·3	4		1·71			16214·5
6163·70	62·3		2		1·40			16219·2
6163·23			1					16220·4
6162·40			2	†6162·53				16222·6
6160·95			1					16226·5
6159·47			1n					16230·4
6157·87	56·7	56·7	6		1·17			16234·6
6157·29			1					16236·1
6154·86			1					16242·5
6153·75			1					16245·4
6151·78	50·5	50·5	4		1·28			16250·7
6150·47			1					16254·1
6149·24			1					16257·4
6147·96	48·1	46·6	4	†6148·10	−0·14			16260·8
6147·43			1					16262·2
6146·46			1					16264·7
6145·38			1					16267·6
6144·26			1					16270·5
6143·17			1					16273·4
†6141·88			6	†6142·04				16276·9
6141·13			1					16278·8
6140·12			1					16281·5
6139·00			1					16284·5
6137·84	36·6	36·8	10		1·24			16287·6
6137·06			1					16289·6
6136·76	35·6	35·5	10	6137·03	1·16			16290·4
6135·89			1					16292·7
6134·73			1			1·81		16295·8
6133·67			1			1·80		16298·6
6132·63			1					16301·4
6131·59		30·3	2					16304·2
6130·48			1					16307·1
6129·22			1					16310·5
6128·04	26·8	26·7	6		1·24			16313·6
6127·32			1					16315·5
6126·16			1					16318·6
6125·16			1					16321·3
6123·81	22·0	22·0	2		1·81			16324·9
6122·42			2					16328·6
6119·67			1					16335·9
6118·67			1					16338·6
6117·49			1					16341·8
†6116·34	15·3	15·1	4		1·04			16344·8
6115·50			1					16347·1
6113·01		12·0	2					16353·7
6111·82			1					16356·9

†6180·414 6141·931 6116·414

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				$\lambda+$	$\frac{1}{\lambda}-$	
6110·81			1					16359·6
6109·44		07·0	2					16363·3
6107·22			1					16369·3
6105·51			1					16373·8
†6103·35	02·0	01·8	8n		1·35			16379·6
6102·30	01·2	00·8	8n		1·10			16382·5
6100·42			1			1·80		16387·5
6098·61	97·4	97·0	4		1·21	1·79		16392·4
6096·89	95·7	95·1	2n		1·19			16397·0
6095·88			1					16399·7
6094·50	93·3	92·8	1		1·20			16403·4
6093·84	92·7	92·1	4n		1·14			16405·2
6092·02			1n					16410·1
6090·38			2					16414·5
6089·68		88·1	4					16416·4
6088·49			1n					16419·6
6087·00			1					16423·6
6085·42		84·0	1					16427·9
6082·84		81·3	1					16434·9
6081·77		80·0	1					16437·8
6079·29			2					16444·5
†6078·64	77·6	77·2	6n	†6078·83	1·04			16446·2
6076·66			1n				4·8	16451·6
6074·21			2				4·9	16458·1
6072·12			2				4·9	16463·8
6070·10			2					16469·3
6067·88			2					16475·3
†6065·64	64·5	64·5	10	†6065·81	1·14			16481·4
6064·92			1			1·79		16483·4
6063·54			1			1·78		16487·1
6062·98		61·4	2					16488·6
6061·41			1					16492·9
6059·43			1					16498·3
6057·34			1					16504·0
†6056·15	55·1	55·0	6n	†6056·35	1·05			16507·2
6054·20	53·1		2		1·10			16512·6
6044·57			1					16538·9
6043·86			1					16540·8
†6042·24	41·2	41·1	6	†6042·46	1·04			16545·2
6040·00			1					16551·4
6035·63	35·0	35·0	2		0·63			16563·4
6034·27	33·0	33·0	2		1·27			16567·1
6032·70			2					16571·4
6031·43			1					16574·9
6030·49		29·0	1			1·78		16577·5
6028·56			1			1·77		16582·8
6027·22	26·0	26·0	6		1·22			16586·5
6026·47			1					16588·6
†6024·21	23·0	23·0	10n	†6024·38	1·21			16594·8
6022·02			4					16600·8
†6020·28	19·1	19·2	6n		1·18			16605·6
6018·20			1					16611·4
6016·87			4					16615·0
6015·85			1					16617·8
†6013·68			4	†6013·83				16623·8

†6103·429 double 6078·711 6065·709 6056·233 6042·323
6024·273 6020·351 double 6013·724

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				$\lambda+$	$\frac{1}{\lambda}-$	
6012·50	11·2	11·5	1		1·30			16628·1
6008·80	07·5	07·3	8		1·30			16637·3
6008·14		06·7	4n					16639·2
6006·74	05·0		1		1·74			16643·1
6005·70		03·9	2					16645·9
†6003·17	02·1		6	†6003·33	1·07			16653·0
6001·36		98·6	1					16658·0
5999·45			1					16663·3
5998·05	96·9	97·0	4n		1·15			16667·2
5997·04			1					16670·0
5995·12			1			1·77		16675·3
5993·37			1			1·76		16680·2
5991·42			1					16685·6
5990·04			1					16689·5
5988·67			1					16693·3
†5987·21	86·2	86·2	6n	†5987·40	1·01			16697·4
5984·98	84·2	84·2	8n		0·78			16703·6
5983·91	82·8	82·7	6n		1·11			16706·6
5978·97			1					16720·4
†5976·93	76·0	76·0	8	†5977·11	0·93			16726·1
†5975·51	74·6	74·3	6		0·91			16730·1
5974·65			1					16732·5
5973·36			1					16736·1
5972·22			1					16739·3
5969·92			1					16745·7
5969·28			1					16747·5
5968·10		66·5	1					16750·8
5966·88			1					16754·3
5964·87			1					16759·9
5963·82		61·3	1					16762·9
5962·28		59·5	2					16767·2
5960·04			1			1·76		16773·5
5958·38	57·1	57·4	4	†5958·55	1·28	1·75		16778·2
†5956·85	55·0	56·0	6		1·85			16782·5
5955·86			1					16785·3
5954·65			1					16788·7
5952·94	51·6	51·6	8		1·34			16793·5
5949·55	48·5	48·7	4n		1·05			16803·1
5947·77			1				4·9	16808·1
5942·61		41·6	2				5·0	16822·6
5941·24		40·0	4					16826·5
5939·34			1					16831·9
5938·85			1					16833·3
†5934·81	33·9	33·0	8		0·91			16844·7
5934·21			1					16846·4
5930·25	29·3	28·7	10		0·95			16857·7
5928·00	27·2	26·2	4		0·80			16864·1
5926·95			1			1·75		16867·1
5924·83			1			1·74		16873·1
5923·66			1					16876·5
5922·67			1					16879·3
5921·69			1					16882·1
5920·62			1					16885·1
5919·11			1					16889·4
5918·18			1					16892·1

†6003·250 5987·293 5977·012 5975·583 5956·932 5934·889

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ +	$\frac{1}{\lambda}$ −	
5917·32			1					16894·5
†5916·41	15·7	15·6	6		0·71			16897·1
5915·65			1					16899·3
†5914·32	13·2	13·4	10n	†5914·47	1·12			16903·1
5912·37			2					16908·7
5910·16	09·4	09·0	4		0·76			16915·0
5908·14		06·7	1					16920·8
†5905·82	04·4	04·3	6		1·42			16927·4
5905·13			1					16929·4
5902·64	01·3	01·3	2		1·34			16936·6
5901·87		00·3	1					16938·8
5900·41			1					16943·0
5899·40		98·0	1					16945·9
†5898·33	97·0	97·0	2		1·33			16948·9
5895·16			1					16958·1
5894·49			1					16960·0
5892·88	92·0	92·0	2		0·88			16964·6
5892·04	90·6	90·6	1		1·44			16967·0
5891·23		89·9	1					16969·4
5889·22			1			1·74		16975·2
5888·10		84·4	1			1·73		16978·4
5884·05	83·0	82·5	4	†5884·19	1·05			16990·1
5882·52			1					16994·5
5881·60		80·6	1					16997·2
5880·27			1					17001·0
5879·80		78·2	4					17002·4
5878·01		78·0	1					17007·6
5876·71	77·0	76·0	1		−0·29			17011·3
5875·76			1					17014·1
5874·82			1					17016·8
5873·44	74·0	72·0	2		−0·56			17020·8
5871·72			1					17025·8
5871·28			1					17027·1
5864·38			1					17047·1
†5862·51	61·5	61·4	10	†5862·66	1·01			17052·5
5859·83	58·4	58·5	8		1·43			17060·3
5857·71			1	†5857·80				17066·5
5856·24	55·5	55·2	2		0·74			17070·8
5855·30		54·2	1					17073·5
5854·01			1			1·73		17077·3
5853·38		52·2	1			1·72		17079·1
5852·35	51·3	51·0	2n		1·05			17082·1
5849·80	48·5	48·5	1		1·30			17089·6
5849·07			1					17091·7
5848·25	47·4	47·2	2n	†5848·52	0·85			17094·1
5845·93			1					17100·9
5845·13			1					17103·3
5838·64	37·0	35·8	2		1·64			17122·3
5837·88		35·1	2n				5·0	17124·5
5836·00			1				5·1	17129·9
5835·52	32·5	33·5	2		3·02			17131·3
5834·22			1n					17135·1
5830·80	27·5	27·5	1		3·30			17145·2
5827·83		25·0	1			1·72		17153·9
†5816·50	15·5	15·5	6	†5816·68	1·00	1·71		17187·4

†5916·480 5914·390 5905·900 5898·401 5862·582 5816·593 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ +	$\frac{1}{\lambda}$ −	
5815·54			1					17190·2
5815·02	14·0	13·6	2		1·02			17191·7
5811·99	11·0	10·5	1		0·99			17200·7
5809·39	08·3	08·0	2		1·09			17208 4
5808·10		06·7	1					17212·2
5806·83	05·8	05·8	2	†5807·05	1·03			17216·0
5805·83			1					17219·0
5804·63	03·5	03·2	1		1·13			17222·5
5804·22		02 8	1					17223·7
5800·21		00·0	1					17235·7
5798·38	97·3	97·3	2		1·08			17241·1
5794·09	93·0	92·2	2		1·09			17253·9
5791·82			1					17260 6
†5791·14	90·2	90·1	4	†5791·30	0·94			17262 6
5790·55		89·8	1					17264·4
5788·45			1					17270·7
5785·50		84·5	1					17279·5
5784·78		84·2	1					17281·6
5784·00		83·4	1			1·71		17284·0
†5782·28	81·3	81·6	8		0·98	1·70		17289·1
5780 84	77·5	78·5	2		3·34			17293·4
5778·58	76·0		1		2 58			17300·2
†5775·24	74·1	74·0	6	†5775·36	1·14			17310·2
5774·49			1					17312·4
5771·28		69·7	1					17322·1
5769·37			1					17327·8
5765·34			1					17339·9
†5763·15	61·9	62·0	10	†5763·23	1·25			17346·5
5762·58			1					17348·2
5761·70			1n					17350·9
5761·39		59·9	1					17351·8
5760·51			2					17354·5
5759·73			1n					17356·8
5759·37		58·2	1					17357·9
5756·85		56·0	1n					17365·5
5755·24			1					17370·4
5754·44		53·9	1n					17372·8
†5753 28	52·0	52·0	8		1·28			17376·3
5752·11	51·0	51·0	2n		1·11			17379·8
5748·01	46·7	46·5	2n	†5748·19	1·31	1·70		17392·2
5745·34			1			1·69		17400·3
5743·04		41 8	1					17407·3
5742·02	40·9	40·9	2		1·12			17410·4
5740 10		39·5	1					17416·2
5738·43			1					17421·3
5737·11		36·8	1					17425·3
5733·97			1					17434·8
†5731·91	30·5	30·5	6	†5732·07	1·41		5·1	17441·1
5727·86	27·0	28·0	1		0·86		5·2	17453·3
5727.20			1					17455·3
5724·52			1					17463·5
5723·82	23·0	22·5	1		0·82			17465·6
5722·00			1					17471·2
5720·95	20·0	19·8	1n		0·95			17474·4
5718·03	16·8	16·5	6	†5718·13	1·23			17483·3

†5791·211 5782·349 5775·309 5763·219 double 5753 343 5731·977

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Ångström	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
5716·20	15·2		1		1·00			17488·9
†5715·24	13·8	14·0	4		1·44			17491·9
5714·34	13·3	13·3	2		1·04			17494·6
5713·54			1					17497·1
5712·30		11·0	2					17500·9
5712·02	10·8	10·7	2		1·22	1·69		17501·7
†5709·56	08·3	08·5	8	†5709·75	1·26	1·68		17509·3
5708·25	07·1	07·1	2		1·15			17513·3
5707·15	06·0	06·0	2		1·15			17516·7
5706·14	05·0	05·0	4		1·14			17519·8
5705·65			2					17521·3
5704·87			1					17523·7
5703·66			1					17527·4
5702·50			1					17531·0
†5701·71	00·4	00·5	6		1·31			17533·4
5700·37			4					17537·5
5699·62			1	5698·70				17539·8
5698·55	97·2	97·5	2		1·35			17543·1
5698·23			1					17544·1
5696·02		95·5	1					17550·9
5695·21			1					17553·4
5693·77	92·8	93·0	2		0·97			17557·9
5691·64	90·6	90·8	2		1.04			17564·4
5690·76			1					17567·1
5688·52			1					17574·1
5686·60	85·5	85·3	6		1·10			17580·0
5684·84			1					17585·4
5683·25		82·2	1					17590·4
5680·42	79·0	79·2	1		1·42			17599·1
†5679·18	77·9	78·0	4		1·28	1·68		17603·0
5672·32	71·0	70·5	1		1·32	1·67		17624·3
5668·65		69·1	1					17635·7
5667·67	66·0	66·6	4		1·67			17638·7
5666·95			1					17641·0
5664·85			1					17647·5
5663·94		63·0	1					17650·4
†5662·68	61·6	61·5	8		1·08			17654·3
5661·50		60·3	1					17658 0
5660·95		59·7	1					17659·7
5658·93	57·6	57·9	10		1·33			17666·0
5657·90			1					17669·2
5656·84			1					17672·5
†5655·64	54·4	54·6	4		1·24			17676·3
5655·40			2					17677·0
5654·21			1n					17680·7
5652·51	51·6	52·5	2		0·91			17686·0
5651·53		50·4	1					17689·1
5650·96		49·5	1					17690·9
5650·24		48·8	1					17693·2
5649·90	48·0	48·0	1n		1·90			17694·3
5646·84		47·5	1					17703·8
5646·20			1n					17705·8
5645·95		44·0	1					17706·6
5644·15	43·0	42·7	2	†5644·27	1·15			17712·3
5642·99		42·0	1					17715·9

†5715·315 5709·628 5701·772 5679·249 5662·746 5655·707

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ+	$\frac{1}{\lambda}$−	
5642·76			1					17716·6
†5641·60	40·2	40·5	4		1·40	1·67		17720·3
5640·60		39·5	1n			1·66		17723·4
5638·45	37·2	37·3	6	†5638·58	1·25			17730·2
5637·53		36·0	1					17733·1
5637·29			1					17733·8
5636·84		35·2	1					17735·2
5636·08		34·0	1					17737·6
5634·16	32·7	32·5	4		1·46			17743·7
5632·54		31·0	1					17748·8
5631·84			2					17751·0
5630·70			1					17754·6
5629·33			1					17758·9
5628·68			1					17760·9
5627·72			2					17764·0
5626·87			1					17766·7
5625·95	24·4	24·1	1		1·55			17769·6
†5624·70	23·2	23·5	8		1·50			17773·5
5623·95			1					17775·9
5623·61			1					17777·0
5621·72			1				5·2	17782·9
5620·70	19·3	19·4	2		1·40		5·3	17786·1
5619·70		18·5	1					17789·2
5618·81	18·0	17·7	2		0·81			17792·1
5617·90			1					17794·9
5617·39	16·1	16·0	1		1·29			17796·6
†5615·81	14·5	14·6	10	5615·85	1·31			17801·6
5614·09			1					17807·0
5612·11		11·0	1					17813·3
5610·05		09·2	2					17819·8
5609·12		07·8	1					17822·8
5607·90		05·8	2					17826·7
5606·30			1			1·66		17831·8
5605·12			1			1·65		17835·5
5603·14	01·7	01·5	8		1·44			17841·8
5601·77			1					17846·2
5600·39	98·9	98·6	2		1·49			17850·6
5598·37	97·2	97·2	4		1·17			17857·0
5596·48			1n					17863·1
5594·73	93·4	93·3	2	†5594·82	1·33			17868·7
5592·64		90·8	1					17875·3
5591·16			1					17880·1
5590·30		88·7	1					17882·8
5588·92			1					17887·2
5586·92	85·6	85·4	10	†5587·04	1·32			17893·6
5585·00		83·3	2					17890·8
5583·13			1n					17905·8
5580·99			1n					17912·7
5579·21		78·0	1n					17918·4
†5576·22	74·9	74·4	8		1·32			17928·0
5574·99			2					17931·9
5573·05	71·7	71·3	10		1·35			17938·2
5571·51			1			1·65		17943 2
†5569·77	68·5	68·5	10		1·27	1·64		17948·8
5568·89			1					17951·6

†5641·660 5624 768 (Peirce's standard) 5615 523 5576·313 5569·843

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				λ+	1/λ−	
5567·50	66·4	66·0	4		1·10			17956·1
5565·76	64·6	64·2	6n	†5565·99	1·16			17961·7
5563·73	62·7	62·5	4		1·03			17968·2
5562·78	61·8	61·4	2n		0·98			17971·3
5560·36	59·3	59·0	2n		1·06			17979·1
5558·00	57·1	56·7	2n		0·90			17986·8
5554·96	53·9	54·0	6n	†5555·17	1·06			17996·6
5553·70	52·7	52·4	1		1·00			18000·7
5550·00	49·0	49·0	2n		1·00			18012·7
5547·12		45·7	2					18022·1
5546·60	45·5	45·3	2		1·10			18023·8
†5544·07	42·7	43·0	4		1·37			18032·0
5543·24	42·0	42·0	4	†5543·44	1·24			18034·7
5542·09			1					18038·4
5541·14		40·0	1n					18041·5
5540·93			1					18042·2
5539·91			1					18045·5
5539·40		37·7	1					18047·2
5538·68	36·3	37·2	2		2·38			18049·5
5537·86			1					18052·2
5536·63			1					18056·2
5535·52			4			1·64		18059·8
5534·87			1			1·63		18062·0
5533·10	31·5	31·8	2		1·60			18067·7
5532·87			1					18068·5
5532·13			1					18070·9
5531·16			1					18074·1
5530·71		29·7	1					18075·6
5529·26		28·4	2					18080·3
5525·70	24·7	24·4	4		1·00			18091·9
5524·40		23·0	1n					18096·2
5522·60	21·5	21·5	2		1·10			18102·1
5521·26	20·0	20·2	1		1·26		5·3	18106·5
5519·69			2				5·4	18111·6
5517·25			1n					18119·6
5516·80	15·6	16·5	1		1·20			18121·0
5514·71			1					18127·9
5512·47	11·4	11·2	2		1·07			18135·3
5510·70	09·5	09·2	1n		1·20			18141·1
5508·53	07·6	07·2	1n		0·93			18148·3
†5506·92	05·9	05·9	8		1·02			18153·6
5506·06			1					18156·4
5504·51		03·3	1					18161·5
5503·32	01·9	02·0	2n		1·42			18165·4
†5501·61	00·5	00·5	8	†5501·82	1·11			18171·1
5500·87			1					18173·5
5499·60			1n			1·63		18177·7
5497·96			1			1·62		18183·2
5497·73			1	†5497·83				18183·9
5497·52	96·6	96·4	6		0·92			18184·6
5496·92			1					18186·6
5495·75			1					18190·5
5494·62	93·5	93·7	2		1·12			18194·2
5493·70	92 5	93·0 92·5	4		1·20			18197·3

†5544·151 5506·989 5501·676

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Ångström	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
5491·98	91·0	90·8	2		0·98			18203·0
5490·10	89·0	89·3	1		1·10			18209·2
5488·04	86·8	86·6	4n		1·24			18216·0
5486·00	85·0	84·0	1		1·00			18222·8
5483·28	82·4	81·8	4		0·88			18231·9
5481·62	80·2	80·2	4		1·42			18237·4
5481·06	79·9	79·6	4		1·16			18239·2
5478·60	77·4	78·0	2		1·20			18247·4
5476·82	75·9	75·8	8	†5476·97	0·92			18253·4
5476·43		75·3	4					18254·7
5474·08	73·3	73·6	6		0·78			18262·5
5472·88	72·0	72·1	2		0·88			18266·5
5470·79		69·7	2					18273·5
5470·36	69·0	69·1	1		1·36			18274·9
5469·11			1n					18278·1
5467·15		66·2	2					18285·7
5466·52	65·6	65·7	4		0·92			18287·8
5465·20			1					18292·2
5464·46	63·2	63·4	2		1·26	1·62		18294·7
		62·6						
†5463·41	62·3	62·3	8n		1·11	1·61		18298·2
5463·19			1					18298·9
5461·68			1n					18304·0
5459·69			1n					18310·7
5457·72			2					18317·3
5455·80	54·7	54·7	10		1·10			18323·7
5454·53			1					18328·0
5452·96		51·5	1					18333·3
5452·10			1					18336·1
5451·00			1					18339·9
5449·95			1					18343·4
5449·16			1					18346·0
5448·52		47·3	1					18348·2
†5447·05	45·9	46·0	10	†5447·20	1·15			18353·2
5445·21	44·2	44·3	8n		1·01			18359·4
5443·33			1					18365·7
5442·42			1					18368·8
5441·56	40·0	40·7	1		1·56			18371·7
5440·41			1					18375·6
5439·48		38·0	2					18378·7
5438·51			1					18382·0
5437·50		36·0	1					18385·4
5436·74	35·4	35·5	2		1·34			18388·0
†5434·66	33·0	33·0	8	†5434·81	1·66			18395·0
5433·15			2n					18400·1
5431·82			1					18404·6
5429·74	28·8	28·0	10		0·94			18411·7
5429·10			1			1·61		18413·9
5428·03			1			1·60		18417·5
5427·13			1					18420·5
5426·14			1					18423·9
†5424·20	23·6	23·4	10n		0·60			18430·5
5422·16			1					18437·4
5420·52		19·2	1					18443·0
5418·66			1				5·4	18449·3

†5463·481 5447·116 5434·726 5424·274

Kayser and Runge (Rowland)	Thalén Ångström	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ +	Reduction to Vacuum $\frac{1}{\lambda}$ —	Oscillation Frequency in Vacuo
5417·15	16·0	16·2	1		1·15		5·5	18454·4
5415·43	14·5	14·6	10n	†5415·52	0·93			18460·2
5413·30			1					18467·5
5411·13	10·0	10·0	8n		1·13			18474·9
5409·75	08·5	08·2	1		1·25			18479·6
5409·30			1					18481·2
5407·73		06·5	1					18486·5
†5405·91	04·8	04·9	10	†5406·06	1·11			18492·8
5404·35	03·1	03·3	8n		1·25			18498·1
5402·91			1					18503·0
5401·97			1					18506·3
	Vogel							
5400·60	99·6	99·6	6n	†5400·83	1·00			18511·0
5399·65			1					18514·2
5398·34	97·3	97·0	2n	5398·63	1·04			18518·7
†5397·27	96·2	96·0	10	†5397·45	1·07	1·60		18522·4
5395·42			1n			1·59		18528·7
5394·74			1					18531·1
†5393·30	92·1	92·3	8	†5393·57	1·2			18536·0
5391·75	90·4	90·3	4	5391·73	1·35			18541·3
5389·71	88·4	88·8	4n	5389·76	1·31			18548·4
5387·80	86·6	86·0	1n	5387·87	1·20			18554·9
5386·63	85·5	85·0	1	5386·76	1·13			18559·0
5385·63			1					18562·4
†5383·50	82·5	82·4	10n	†5383·68	1·00			18569·8
†5379·70	78·5	78·0	4	†5379·83	1·20			18583·9
5379·01			1					18585·3
5377·88	76·5	76·2	2		1·38			18589·2
5377·08	75·7	75·2	2	5377·75	1·38			18591·9
5375·57			1	5376·96				18597·2
5373·85	72·6	72·5	4	5373·85	1·25			18603·1
5372·01			1					18609·5
†5371·62	70·5	70·6	10	†5371·74	1·12			18610·9
5370·09	69·0	69·0	8n	5370·24	1·09			18616·2
†5367·60	66·4	66·6	8n	†5367·79	1·20			18624·8
5365·62	64·4	64·3	4	5365·67	1·12			18631·7
5365·02	63·9	63·6	6n	5365·19	1·32			18633·8
5362·90	61·9	61·8	2	5363·21	1·00			18641·1
5361·80	60·8	60·6	1	5362·06	1·00			18645·0
5359·97			1			1·59	5·5	18651·3
5358·16	57·3	57·3	1	5358·65	0·86	1·58	5·6	18657·5
5356·28		55·0	1					18664·1
†5353·53	52·5	52·5	6	5353·71	1·03			18673·7
5349·83	48·8	48·7	4n	5349·91	1·03			18686·6
5348·58			1					18690·9
5347·62			1					18694·3
5346 62			1					18697·8
5345·75			1					18700·8
5344·64			1					18704·7
5343·62	42·7	42·4	4n	5343·82	0·92			18708·3
5341·49			1					18715·8
5341·15	40·3	40·0	8	†5341·36	0·85			18717·0
5340·10	39·2	38·9	8	5340·34	0·90			18720·6
5337·37			1n					18730·2

†5405·977 5397·342 5393·366 5383·567 5379·769
5371·677 double 5367·666 5353·587

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$−	
5335·47			1					18736·9
5335·25			1					18737·7
†5333·04	32·1	32·0	6	†5333·16	0·94			18745·4
5330·15	29·0	29·1	4	5330·07	1·15			18755·6
5328·94			1					18759·9
5328·50	27·3	27·6	8	†5328·51	1·20			18761·4
5328·15	27·0	27·0	10	5328·20	1·15			18762·6
5326·32		25·2	1					18769·1
5324·31	23·2	23·5	10	†5324·48	1·11	1·58		18776·2
5323·70			1			1·57		18778·3
5322·30	21·4	21·3	2	5322·45	0·90			18783·3
5321·36	20·4	20·3	1	5321·51	0·96			18786·6
5320·28	19·3	19·2	1	5320·39	0·98			18790·4
5319·24	18·5	18·0	1		0·74			18794·1
5316·85	16·1	16·0	2	†5317·01	0·75			18802·5
5315·19	14·6	14·5	1	5315·73	0·59			18808·4
5313·44			1					18814·6
5311·61			1					18821·1
5309·89			1					18827·2
†5307·48	06·5	06·6	6	†5307·66	0·98			18835·7
5306·31			1					18839·9
5304·22			1					18847·3
5302·46	01·5	01·4	10	†5302·60	0·96			18853·6
5300·25	99·4	99·0	1	5300·51	0·85			18861·4
5298·91	98·1	98·2	2	5399·19	0·81			18866·2
5296·82	94·9	95·0	1		0·92			18873·6
5295·41		94·3	1					18878·7
5294·63	93·7	93·9	1	5294·70	0·93			18881·5
5294·05	92·7		2		1·55			18883·5
5292·78		92·0	2					18888·1
5291·07			1					18894·2
5289·22			1					18900·8
†5288·64	87·6	87·6	4	†5288·85	1·04	1·57		18902·8
5287·48			1			1·56		18907·0
5285·76	84·2	84·2	1	5285·33	1·56			18913·2
5284·63	83·4	83·8	1	5284·66	1·23			18917·2
5283·75	82·7	82·6	10	†5283·93	1·05			18920·3
5281·91	80·9	80·8	8	†5282·15	1·01			18926·9
5280·53	79·7	79·0	2	5280·68	0·83			18931·9
5278·95			1					18937·6
5277·80			1					18941·7
5276·19	75·2	75·0	1	†5276·26	0·99			18947·5
5275·12	74·5	74·0	1n	5275·68	0·75			18951·3
5273·55	72·5	72·3	6	5273·81	1·05			18957·0
5273·32			4					18957·8
5272·28			1					18961·5
5271·37			1					18964·8
†5270·43	69·2	69·5	10	†5270·55	1·23			18968·2
†5269·65	68·5	68·6	10n	†5269·90	1·15			18971·0
5268·73			1					18974·3
5266·72	65·3	65·5	10	5266·80	1·42			18981·5
5264·00			1					18991·4
5263·42	62·3	62·0	6	5263·67	1·12			18993·4
5257·77	56·8	56·6	1	5258·16	0·97			19013·9
5255·44	54·7	54·7	1	5256·03	0·74			19022·3

†5333·094 5307·547 5288·712 $E_1$5270·497 double $E_2$5269·720

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
5255·08	53·9	54·0	2	†5255·32	1·88			19023·6
†5253·56	52·4	52·6	4	5253·68	1·16	1·56		19029·1
5252·08	50·8	51·0	2	5252·07	1·28	1·55		19034·5
†5250·76	49·4	49·8	6	†5250·85	1·36			19038·3
†5250·33			1					19040·8
5249·17	48·0	47·9	1n	5249·33	1·17			19045·0
5247·20	46·2	45·7	2	5247·37	1·00			19052·2
	44·7	44·0		5245·98				
5243·95	43·0	42·8	2n	5244·24	0·95			19064·0
5242·58	41·8	41·1	6	†5242·75	0·78			19069·0
5242·00			1				5·6	19071·1
5236·33	35·4	35·5	1	5236·46	0·93		5·7	19091·6
5235·50	34·4	34·7	4	5235·60	1·10			19094 7
5234·77	33·6	33·8	1	5234·77	1·17			19097·3
†5233·05	32·1	32·1	10	†5233·21	0·95			19103·6
5232·48			1					19105·7
5231·49			1					19109·3
†5229·95	29·0	29·0	6	5230·28	0·95			19114·9
5228·53	27·4	27·6	1	5228·39	1·13			19121·1
5227·85			1					19122·6
5227·33	26·2	26·4	10	5227·47	1·13			19123·5
5227·00		26·1	10					19125·7
5226·63			1					19127·1
5226·25			1					19128·5
5225·60	24·5	24·8	2	5225·66	1·10			19130·9
5224·40			1n					19135 3
5223·28	22·3	22·0	1	5223·44	1·18			19139·3
5222·63	21·5	21·4	1	5222·79	1·13			19141·7
5221·89		20·8	1					19144·4
5221·09	20·2	20·0	1		0·89			19147·4
5219·76	18·7		1	5220·07	1·06			19152·3
5218·28		17·7	2					19157·7
5218·03			2			1·55		19158·6
†5217·49	16·7	16·7	4	5217·93	0·79	1·54		19160 6
5216·37	15·6	15·5	6	5216·38	0·77			19164·7
†5215·28	14·5	14·5	4	†5215·56	0·78			19168·7
5212·85		11·0	1					19177·7
	09·5	09·5		5210·72				
5208·72	07·6	07·8	6	†5208·77	1·12			19192·9
5208·11			1					19195·1
5207·95			1					19195·7
5206·13		05 3	2					19202·4
5205·17			1					19206·0
†5204·65	03·8	03·3	4	5204·85	0·85			19207·9
†5202·42	01·7	01·4	8	†5202·61	1·72			19216·1
5201·22			1					19220·6
5199·70			1					19226·2
†5198·82	98·2	98·2	4	5199·15	0·62			19229·4
5198·09			1					19232·1
5197·68			1					19233·6
5196·69			1					19237·3
5196·20	95·3	95·6	1	5196·46	0·90			19239·1
5195·59	94 6	94·7	4	5195·73	0·99			19241·4
5195·03	94·0	94·2	8	5195·15	1·03			19243·5
5194·20			1					19246·3

†5253 641 5250·819 5250·389 5233·123 5230·012 5217·560
5215·354 5204·710 double 5202·487 double 5198·887

Iron (Arc Spectrum)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland —Angström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$—	
5193·10			1					19250·6
5192·47	91·4	91·8	10	†5192·67	1·07			19253·0
5192·10			1					19254·3
5191·56	90·6	90·6	10	†5191·76	0·96			19256·3
5188·90			1					19266·2
5188·00	87·2	87·2	2	5188·16	0·80			19269·5
5186·65			1					19274·6
5184·42	83·3	83·8	4n	5184·46	1·12	1·54		19282·9
5181·90			1			1·53		19292·2
5181·40	80·8	80·7	1	5181·81	0·60			19294·1
5180·14	79·4	79·4	2	5180·29	0·74			19298·8
5178·89	77·8	78·2	1n	5178·87	1·08			19303·5
5177·40	76·3	76·5	1	5177·23	1·10			19309·0
5173·85			1					19322·3
5171·71	71·1	70·9	8	5171·89	0·61			19330·3
5171 15			1					19332·4
5170·86			1					19333·4
5170·08			1					19336·4
†5169·09	68·4	68·9	6	5169·33	0·69			19340·1
†5167·50	67·0	67·1	10	†5167·67	0·50			19346·0
5166·36	65·8	65·7	4	5166·70	0·58			19350·3
†5165·52	64·8	65·0	4n		0·72			19353·4
5164·65	63·8	64·2	1	5164·87	0·85			19356·7
†5162·49	61·6	61·5	6n	†5162·60	0·89			19364·8
5160·39	59·6		1n	5160·57	0·79			19372·7
5159·09	58·3		4n	†5159·40	0·79		5·7	19377·6
5157·18	56 6		1	5157·69	0·58		5·8	19384·6
	56·0			5157·18				
	54·7			5155·87				
	53·7			5154·77				
5153·28	52·8		6	5154·04	0·48			19399·3
5152·00	51·5		4	5152·64	0·50			19404·1
†5150·96	50·6		6	5151·66	0·36			19408·1
5149·43			1			1·53		19413·8
5148·36	47·8		6n	5148·84	0·56	1·52		19417·9
5148·15	46·4		2	5147·64	1·75			19418·6
5146·57	45·3		1	5146·56	1·27			19424·6
5145·17	44·3		1	5145·78	0·87			19429·9
5144·17	42·8		1	5143·98	1·37			19433·7
†5142·99	41·9		4	5143·09	1·09			19438·1
5142·63	41·6		4	5142·71	1·03			19439·5
†5141·85	40·8		4	5141·95	1·05			19442·5
5139·58	38·5		10	†5139·72	1·08			19451·0
5139·34			10					19451·9
5138·12			1					19456·6
5137·50	36·3		6n	5137·46	1·20			19458·9
5136·12	35·4		1	5136·50	0·72			19464·1
5133·64	33·0		8	†5134·00	0·64			19473·5
5131·51	30·8		4	5131·98	0 71			19481·6
5129·73	28·8		1	5129·92	0·93			19488·4
5128·15			1					19494·4
5127·44	26·4		4	5127·55	1·04			19497·1
5126·70			1					19499·9
5126·31	25·3		1	5126·42	1·01			19501·4
5125·27	24·4		8n	†5125·48	0·87			19505·4

†$b_3$5169·159 double $b_4$5167·580 double 5165·590 5162·452
5151·029 5143·041 double 5141·915

Iron (Arc Spectrum)—*continued.*

Kayser and Runge (Rowland)	Thalén — Vogel	Thalén — Fievez	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum — λ+	Reduction to Vacuum — $\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo
5124·18			1	*				19509·5
5123·82	23·1		6	5124·31	0·71			19510·9
5121·71	20·9		2n	5121·93	0·81			19518·9
5120·32			1					19524·2
5119·77			1					19526·3
5117·98			1					19533·2
5115·87	14·6		1	†5115·79	1·27	1·52		19541·2
5114·45	13·6		1	5114·52	0·85	1·51		19546·6
5111·21			1					19559·0
†5110 50	09·2		6	5110·03	1·30			19561·7
5109·75			1					19564·6
5107·76	07·2		6	†5107·85	0·56			19572·2
5107·53			4					19573·1
5106·57			1					19576·8
†5105·66	05·2		8	5105·83	0 46			19580·3
5104·45	04·0		1	5104·75	0·45			19584·9
5104·25	03·7		1	5104·35	0·55			19585·7
5104·07			1n					19586·4
5103·37			1					19589·1
5102·28			1					19593·3
5100·00			1					19602·0
5099·17			1					19605·2
5098·77	98·2		6	†5098·91	0·57			19606·8
†5097·07	96·6		4n	5097·36	0·47			19613·3
†5090·90	90·3		4n	†5091·12	0·60			19637·1
5088·15	87·7		1	5088·48	0·45			19647·7
5087·16	85·7		1	5086·52	0·46			19651·5
5084·26	83·8		1	†5084·39	0·46			19662·7
†5083·46	82 8		6	5083·66	0·66			19665·8
5083·14			1					19667·1
5080·78	80·6		1	5081·74	0·18			19676·2
5080·37	80·2		1	5081·11	0 17	1·51		19677·8
5079·85	79·4		6	5080·41	0·45	1·50		19679·8
5079·36	78·8		6n	5079·77	0·56			19681·7
5079·00			1					19683·1
5076·43	75·7		2	†5076·62	0·73			19693·1
5074·80	74·0		4	5075·03	0·80			19699·4
5072·82	72·0		1	5072·94	0·82			19707·1
5072·04	71·3		1	5072·34	0·74			19710·1
†5068·88	68·2		8	5069·10	0·68			19722·4
5067·22	66·6		1	5067·50	0·62			19728·9
5065·09	64·5		6n	†5065·21	0·59		5·8	19737·2
5060·11	59·2		1	5060·11	0·91		5·9	19756·5
	57·5							
	56·5			5057·44				
	55·8			5056·80				
	55·3			5056·11				
5054·71	53·9		1	5054·76	0·81			19777 6
5053·65	52·8		1	5053·77	0·85			19781·8
	52·2			5053·07				
5051·72	51·0		6	†5051·85	0·62			19789·3
5050·98			1					19792·2
5050·58			1					19793·8
†5049·94	49·4		8	†5050·05	0·54			19796·3
5048·57	48·1		2	5048 75	0·47			19801·7

†5110·572 5105·723 5097·168 double 5090·961
5083·527 5068·944 5050·006

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}$−	Oscillation Frequency in Vacuo
5047·85			1			1·50		19804·5
5044·38	43·6		2	5044·50	0·78	1·49		19818·1
5041·85	41·0		8	†5041·96	0·85			19828·1
5041·17	40·3		4	†5041·24	0·87			19830·8
5039·38	38·5		2	5039·51	0·88			19837·8
5036·90	36·2		1	5037·25	0·70			19847·6
5036·40	35·7		1	5036·75	0·70			19849·5
5031·95	31·3		1	5032·39	0·65			19867·1
5030·99	30·4		1	5031·45	0·59			19870·9
	30·3							
5029·73	29·1		1	5030·16	0·82			19875·9
5028·25	27·4		4	5028·46	0·85			19881·7
5027·28	26·4		4n	†5027·51	0·80			19885·6
5025·60	24·8		1	5025·77	0·80			19892·2
	24·0			5024·97				
5023·53	22·7		1		0·83			19900·4
5022·35	21·5		4	5022·45	0·85			19905·1
5021·61	20·8		1	5021·84	0·81			19908·0
5020·90	20·0		1	5021·03	0·90			19910·8
5019·89	19·4		1	5020·30	0·89			19914·9
5019·11			1					19917·9
5018·53	17·7		4	†5018·65	0·83			19920·3
5017·81			1					19923·1
5017·02	16·3		1	†5017·22	0·72			19926·2
5016·40			1					19928·7
5015·40			1					19932·7
5015·09	14·4		6	5015·26	0·69			19933·9
5014·42			1					19936·6
5014·10			1					19937·9
5013·48			1					19940·3
5012·86			1					19942·8
5012·50	11·7		1	5012·72	0·80			19944·2
5012·15	11·3		6	5012·19	0·85			19945·6
5011·42			1			1·49		19949·4
5007·50	06·6		2n	†5007·58	0·90	1·48		19964·1
†5006·24	0·55		8	†5006·28	0·75			19969·2
†5005·84	05·0		6	5005·84	0·84			19970·8
5004·92	04·0		1		0·92			19974·4
5004·14	03·2		1	5004·34	0·94			19977·5
5002·95	02·2		2	5003·12	0·75			19982·3
5002·02	01·1		8	5002·16	0·92			19986·0
4999·23	98·3		1	4999·38	0·93			19997·2
4997·00	95·6		1		0·40			20006·1
4995·81	94·8		1	4995·89	1·01			20010·9
4994·63			1					20015·6
†4994·25	93·6		4	4994·58	0·65			20017·1
4991·43	90·5		2n	†4991·44	0·93			20028·4
4990·56	89·9		1	4990·94	0·66			20031·9
4989·10	88·3		2n	4989·29	0·80			20037·8
4986·37	85·9		1	4986·99	0·47			20048·8
4985·68	85·3		4	4986·36	0·38			20051·5
4985·35	84·7		4	†4985·74	0·65			20052·9
4983·97	84·4		4	4985·43	0·57			20058·4
4983·41	83·0		2	4984·16	0·11			20060·7
4983·00	82·4		1	4983·45	0·60			20062·3

†5006·296 5005·895 4994·310

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
4982·67	81·8		6	4982·81	0·87			20063·7
4981·73	79·7		1		2·03			20067·4
4979·66	78·8		1	4979·69	0·86			20075·8
†4978·71	78·1		4	4979·09	0·61			20079·6
4977·79	77·0		1	4978·72	0·79	1·48		20083·3
4976·03			1			1·47		20090·4
4975·60	74·7		1	4975·81	0·97			20092·2
4974·40			1					20097·0
†4973·29	72·4		4	†4973·40	0·89			20101·5
4972·36			1				5·9	20105·3
4970·58	69·5		1		1·08		6·0	20112·4
4970·07	69·2		1	4970·06	0·87			20114·4
4968·79	67·7		1	4968·69	1·09			20119·6
4967·97	67·1		1	4968·05	0·87			20122·9
4966·96			1					20127·0
4966·23	65·3		6	†4966·36	0·93			20130·0
4964·65	63·4		1	4964·50	1·25			20136·4
4962·63	62·0		1	4963·02	0·63			20144·6
4962·03	61·3		1	4962·37	0·73			20147·0
4961·15	60·3		1	4961·46	0·85			20150·6
4959·61			1					20156·9
4957·80	56·8		8	4957·90	1·00			20164·2
4957·43	56·6		6	4957·53	0·83			20165·7
4956·11			1					20171·1
4955·73			1					20172·7
4954·90			1					20176·0
4954·60	53·7		1	4954·83	0·90			20177·3
4952·64	51·8		1	4952·81	0·84			20185·2
4950·25	49·4		2	†4950·43	0·84			20195·0
4948·38			1n					20202·6
4946·54	45·7		4	4946·74	0·84			20210·1
4945·80	44·9		1	4945·99	0·90			20213·2
4943·80	43·7		1	4944·70	0·10			20221·4
4942·51	41·7		1	4942·75	0·81	1·47		20226·6
4941·32			1			1·46		20231·5
4939·78	38·8		4	4939·80	0·98			20237·8
	38·3			4939·43				
4938·93	37·8		6	4938·93	1·13			20241·3
4938·30	37·3		2	4938·31	1·00			20243·9
4937·44	36·3		1	4937·34	1·14			20247·4
4934 08			1					20261·2
4933·44	32·6		1	4933·67	0·84			20263·8
	31·3			4932·40				
4930·43	29·7		1	4930·76	0·73			20276·2
4927·93	27·3		1	4928·40	0·63			20286·7
4927·46	26·7		1	4927·93	0·76			20288·4
	24·6							
†4924·89	24·1		2	4925·19	0·79			20299·0
4924·00	23·2		1	†4924·25	1·80			20302·7
4923·26			1					20305·7
4921·11			1					20314·6
†4920·63	19·5		10	†4920·79	1·13			20316·6
†4919·11	18·1		8	†4919·20	1·01			20322·9
4918·15	17·0		1	4918·27	1·15			20326·8
4917·41	16·4		1	4917·59	1·01			20329·9

†4978·779 4973·257 4924·950 4920·685 4919·177

IRON (ARC SPECTRUM)—*continued*.

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}$−	Oscillation Frequency in Vacuo
4913·76			1					20345·0
4911·93	11·2		1	4912·38	0·73			20352·6
4910·60	10·0		2	4911·15	0·60			20358·1
4910·15	09·5		4	4910·58	0·65			20360·0
4909·53	08·7		2	4909·81	0·83			20362·5
4907·86	06·8		1	4907·97	1·06	1·46		20369·5
4906·68			1			1·45		20374·4
4905·30	04·3		1	4905·33	1·00			20380·1
†4903·41	02·4			†4903·63	1·01			20388·0
	00·1			4901·30				
	97·8			4898·98				
	96·8			4897·91				
4896·56	95·9		1	4897·01	0·66		6·0	20416·5
4893·02	92·2		1	4893·12	1·02		6·1	20431·2
4891·62	90·8		10	†4891·78	0·82			20437·0
4890·89	90·2		8	†4891·10	0·69			20440·1
4889·95			1					20444·0
4889·14	88·4		2	4889·32	0·74			20447·4
4888·71	87·9		1	4888·87	0·81			20449·2
4887·39	86·3		1	4887·36	1·09			20454·7
4886·43	85·6		1	4886·59	0·83			20458·7
4885·55	84·6		2	4885·63	0·95			20462·4
4882·27	81·4		1	4882·47	0·87			20476·2
4881·80	80·8		1	4881·95	1·00			20478·1
4878·33	77·4		6	4878·49	0·93			20492·7
4876·00	75·3		1	4876·67	0·70			20502·5
	74·3			4875·68				
	73·7			4875·15				
	73·0			4874·21		1·45		
4872·25	71·3		8	4872·45	0·95	1·44		20518·3
4871·43	70·6		8	†4871·60	0·83			20521·7
4870·14			1					20527·2
4869·71	68·7		1	4869·87	1·01			20529·0
	67·6			4868·76				
	66·6							
4863·78	62·8		1		0·98			20554·0
	61·7							
4862·07	61·2		1	4862·17	0·87			20561·3
4860·92	60·3		1n		0·72			20566·1
†4859·86	58·8		8	4860·01	1·06			20570·6
4859·20			1					20573·4
4857·40	56·6		1	4857·64	0·80			20581·0
4855·80	54·7		1	†4855·89	1·10			20587·8
4855·00	54·1		1	4855·11	0·90			20591·2
4852·09	51·2		1	4852·39	0·89			20603·6
4849·02	48·8		1	†4849·05	0·22			20616·6
4848·57	48·1		1	4848·77	0·47			20618·5
4845·76	44·7		1	4845·67	1·06			20630·5
4844·13	43·3		1	4844·35	0·83			20637·4
4843·31	42·3		2	4843·48	1·01			20640·9
4841·92	41·1		1	4842·12	0·82			20646·9
4840·42	39·4		1	4840·62	1·02			20653·3
4839·66	38·8		2	4839·94	0·86			20656·5
4838·66	37·7		1	†4838·90	0·96			20660·8
4836·04	35·0		1	4836·31	1·04	1·43		20672·0

†4903·485 double   4859·929

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}$−	Oscillation Frequency in Vacuo
4834·64	33·8		1	4834·96	0·84			20678·0
4832·84	31·8		2	4833·17	1·04			20685·7
4827·57	26·7		1		0·87			20708·2
4825·44	24·6		1		0·84			20717·4
4824·27			1					20722·4
†4823·63	23·3		4	†4824·04	0·33		6·1	20725·2
4817·90	17·2		1	†4818·24	0·70		6·2	20749·7
4815·42	15·3		1		1·12			20760·4
4813·33	12·3		1	4813·68	1·03			20769·4
4811·22	10·3		1	4811·67	0 92			20778·5
4810·06	09·3		1	†4810·81	0·76			20783·6
4809·65			1					20785·3
4809·36	08·6		1		0·76			20786·6
4808·87	08·0		1	†4809·05	0·87			20788·7
4808·25	07·5		1		0·75			20791·4
4807·86	07·1		1		0·76			20793·1
4804·71	03·8		1	4804·89	0·91			20806·7
4803·00	02·1		4	4803·12	·90	1·43		20814·1
4801·26			1			1·42		20821·7
4800·76	99·8		2		0·96			20823·8
4799·98	99·2		1		0·78			20827·2
4799·50	98·6		1		0·90			20829·3
4798·90			1					20831·9
4798·38	97·7		1	†4798·75	0·58			20834·2
	97·3			4798·58				
4794·15	93·5		1	4794·73	0·65			20852·6
4792·62	92·1		1	4793·21	0·52			20859·2
4791·33	90·3		1	4791·51	1·03			20864·8
4790·54			1					20868·3
4789·74	88·8		6	4790·02	0·94			20871·8
4788·86	87·8		2	4789·10	1·06			20875·6
4787·98	86·8		1n	4788·18	1·18			20879·4
4786·91	85·9		4		1·01			20884·1
4786·04	84·9		1	4786·17	1·14			20887·9
4783·56	79·8		4	†4783·73	3·76			20898·7
4779·55	78·5		1	4779·80	1·05			20916·3
4776·17	75·3		1		0·87			20931·1
4772·95	71·8		2	†4773·24	1·15			20945·2
4771·81	70·7		1	4771·95	1·11			20950·2
4768·46	67·3		2	4768·70	1·16			20964·9
4767·13			1					20970·8
4766·56	65·8		2	4767·18	0·76	1·42		20973·3
4765·98	65·3		1	4766·74	0·68	1·41		20975·8
	64·4			4765·82				
4762·48			1	†4762·83				20991·3
4761·66	58·8		1	4760·21	0·86			20994·9
4757·70	56·7		2	4757·91	1·00			21012·4
4756·20	55·3		1	4756·45	0·90			21019·0
†4754·16	54·7		4	†4754·40	0·46			21028·0
4752·50	51·6		1	4752·77	0·90			21035·3
	50·2			4751·47				
4750·13	49·2		1	4750·29	0·93			21045·8
4749·77			1				6·2	21047·4
4747·49	47·2		1	†4748·40	0·29		6·3	21057·5
4745·92	45·0		2	4746·16	0·92			21064·4

†4823·685 4754·222

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
	43·6			4744·75				
4741·65	40·7		2	4741·84	0·95			21083·4
4741·27	39·6		1	4740·69	1·67			21085·1
4740·48			1					21088·6
4739·26			1					21094·0
4737·75	37·1		1	4738·05	0·65			21100·8
4736·91	36·2		10	†4737·15	0·71			21104·5
4735·96	35·2		4	4736·16	0·76			21108·7
4734·25	33·3		1	4734·38	0·95			21116·4
4733·71	32·7		4	4733·90	1·01			21118·8
4731·60	30·7		1	4731·81	0·90	1·41		21128·2
4730·41			1			1·40		21133·5
4729·84	28·9		1	4730·02	0·94			21136·1
4729·13	28·3		1	4729·41	0·83			21139·2
4728·67	27·9		4	4728·90	0·77			21141·3
†4727·56			4	†4727·72				21146·3
4726·38	25·4		1	4726·45	0·98			21151·5
4722·27			1					21170·0
4721·11	20·3		1		0·81			21175·2
4714·31	13·7		1	†4714·75	0·61			21205·7
4712·21	11·4		1	4712·46	0·81			21215·2
4711·56	10·7		1	4711·83	0·86			21218·1
4710·37	09·5		4	4710·62	0·87			21223·4
4709·83			1					21225·9
4709·18	08·3		4	4709·41	0·88			21228·8
4707·45	06·6		8	4707·69	0 85			21236·6
4705·53	04·7		1	4705·83	0 83			21245·3
4705·10	04·2		2	4705·30	0 90			21247·2
4701·10			1n					21265·3
4700·49	99·4		1n	4700·48	1·09			21268·1
4698·50	97·7		1	4698·78	0·80	1·40		21277·1
4694·97	94·3		1	4695·41	0·67	1·39		21293·1
4691·52	90·6		6	†4691·78	0·92			21308·7
4690·26	89·3		2	4690·37	0·96			21314·5
4689·62	88·6		1	4689·64	1·02			21317·4
4688·39	87·3		1n	4688·39	1·09			21323·0
4687·49	86·5		1	4687·56	0·99			21327·1
4685·27	83·7		1	4684·79	1·57			21337·2
†4683·68	82·7		2	4683·76	0·98			21344·4
4682·74			1					21348·7
4682·18	81·3		1	4682·46	0·88			21351·3
4681·58	80·6		1	4681·60	0·98			21354·0
4680·49	79·7		1	4680·63	0·79			21359·0
†4678·97	77·9		8	†4679·23	1·07			21365·9
4675·23			1				6·3	21383·0
4674·78			1				6·4	21385·0
4674·37			1					21386·8
4673·29	72·2		4	†4673·37	1·09			21391·8
4669·30	68·3		4	4679·28	1·00			21410·1
†4668·23	67·2		6	4678·20	1·03			21415·0
4667·56	65·5		6	†4667·81	1·06			21418·1
4666·08	64·9		1n	4666·08	1·18			21424·9
4664·46			1					21432·3
4663·25	62·3		1	4663·49	0·95			21437·9
4662·09	61·2		2		0·89			21443·2

†4727·625 double 4683·733 4679·020 4668·302 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$−	
4661·61	60·7		1	4661·71	0·91	1·39		21445·4
4658·77			1			1·38		21458·5
4658·42	57·5		1	4658·52	0·92			21460·1
4657·71	56·7		1	4657·82	1·01			21463·4
4654·70	53·7		10	†4654·89	1·00			21477·3
4652·21			1					21488·8
4651·27	50·4		4	4651·55	0·87			21493·1
4649·95	49·2		1	4650·37	0·75			21499·2
4647·54	46·7		8	4647·70	0·84			21510·4
4646·34			1n	†4646·52				21515·9
4644·94			1n					21522·4
†4643·58	42·7		4	4643·76	0·88			21528·7
4641·12	40·0		1n	4641·21	1·12			21540·1
4640·45			1					21543·2
4638·13	37·3		6	4638·32	0·83			21554·0
4637·66	36·7		6	4637·83	0·96			21556·2
4635·95	35·0		2	4636·19	0·95			21564·1
4634·92	33·9		1n	4635·04	1·02			21568·9
4633·87	33·0		1	4634·06	0·87			21573·8
4633·02	32·1		4	†4633·24	0·92			21577·8
4631·61			1					21584·4
4630·91			1					21587·6
4630·22	29·3		4	4630·45	0·92			21590·8
4629·44			1					21594·5
4627·65	26·6		1	4627·79	1·05			21602·8
4626·65			1			1·38		21607·5
4625·19	24·3		6	†4625·35	0·89	1·37		21614·3
4619·40	18·6		6	4619·66	0·80			21641·4
4618·88	18·1		2	4619·14	0·78			21643·9
4615·73	14·8		1	4615·92	0·93			21658·6
4614·29	13·3		1	4614·53	0·99			21665·4
4613·35	12·5		4	†4613·59	0·85			21669·8
†4611·38	10·5		8	4611·60	0·88		6·4	21679·1
4607·79	07·0		6	†4607·88	1·09		6·5	21695·9
4606·34			1					21702·7
4605·52			1n					21706·6
4604·84			1n					21709·8
4604·01	03·7		1	4604·90	0·41			21713·7
4603·03	02·3		8	4603·30	0·73			21718·3
†4602·11	01·3		4	4602·35	0·81			21722·7
4601·08	00·2		1	4601·35	0·88			21727·5
4600·09			1n					21732·2
4598·26	97·4		6	4598·48	0·86			21740·9
4597·50			1					21744·4
4596·64			1					21748·5
4596·13	95·3		2n	4596·38	0·83			21750·9
4595·48	94·7		4	4595·71	0·78			21754·0
4594·25			1					21759·8
4593·64			1					21762·7
4592·75	91·9		8	†4592·88	0·85			21766·9
4591·52	90·1		1n	4591·10	1·42	1·37		21772·8
4587·23	86·4		4	4597·45	0·83	1·36		21793·1
4586·46			1					21796·8
4584·89	84·2		2	4595·11	0·69			21804·3
4583·93	83·3		2	4594·17	0·63			21808·8

†4643·641 4611·437 double 4602·173

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
4583·04			1					21813·1
4582·51			1					21815·6
4581·66	80·8		4	†4581·72	0·86			21819·6
4580·67	79·8		2		0·87			21824·4
4580·04	79·4		1	4580·38	0·64			21827·4
4579·93			1					21827·9
4579·30			1					21830·9
4575·87			1					21847·3
4574·84	74·2		4	4575·07	0·64			21852·2
4574·34			1					21854·6
4573·05	72·2		1	4573·16	0·85			21860·7
4571·62	71·1		1	4572·00	0·52			21867·6
4568·93	68·2		4	4569·10	0·73			21880·5
4567·10	66·3		1	4567·20	0·80			21889·2
4566·62	65·8		2	4566·82	0·82			21891·5
4565·81	65·0		2	4565·87	0·81			21895·4
4565·44			1					21897·2
4564·87	64·2		2	4565·04	0·67			21899·9
4561·84			1					21914·5
4561·09	60·7		1	4561·71	0·39			21918·1
4560·26	59·4		2	4560·38	0·86			21922·1
4558·18	57·3		1	4558·36	0·88			21932·1
4557·46			1n					21935·5
4557·04			1					21937·6
4556·22	55·4		8	4556·33	0·82	1·36		21941·5
4554·63			1			1·35		21949·2
4554·16			1	†4554·35				21951·4
4552·66	51·8		4	4552·81	0·86			21958·7
4551·76			1n					21963·0
4551·10	50·1		1n	4551·07	1·00			21966·2
4549·57	48·9		4	†4549·86	0·67			21973·2
4548·88			1					21976·9
4547·95	47·3		8	4548·16	0·65			21981·4
4547·14	46·3		4	4547·28	0·84			21985·3
4546·61			1					21987·9
4546·13	4·0		1	4544·95	2·13			21990·2
4542·84			1n					22006·2
4542·53	41·8		2	4542·80	0·73			22007·7
4542·07			1					22009·9
4541·43			1					22013·0
4540·77			1				6·5	22016·2
4539·87			1				6·6	22020·5
4538·96	38·0		2	4539·07	0·96			22024·9
4537·74			1					22030·8
4536·58			1					22036·4
4536·10			1					22038·8
4535·65			1					22041·0
4534·94			1n					22043·4
4534·13			1					22048·3
4533·35	32·5		2	4533·47	0·85			22052·1
4532·47			1					22056·4
4531·75	30·8		4	4531·93	0·95			22059·9
4531·25	30·4		8	4531·40	0·85			22062·4
4530·51			1					22066·0
4529·75	28·8		4	4529·86	0·95			22069·7

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
4528·78	28·0		10	†4529·02	0·78			22074·4
4527·99			1					22078·3
4527·36			1					22081·3
4526·66	25·7		4	4526·75	0·96			22084·7
4525·99			1					22088·0
4525·27	24·4		6	4525·42	0·87			22091·5
4524·91			2					22093·3
4523·47	22·6		1	4523·65	0·87			22100·3
4522·72	22·0		1	†4523·60	0·72			22104·0
4520·35	19·5		1	†4520·46	0·85	1·35		22115·6
4518·62	17·6		1	4518·67	1·02	1·34		22124·0
4517·64	16·8		4	4517·83	0·84			22130·8
4515·36	14·7		1	4515·63	0·66			22140·0
4514·29	13·4		2		0·89			22144·3
4509·95	08·9		1	4509·98	1·05			22166·6
4509·41			1					22169·2
4508·40	07·6		1	†4508·48	0·80			22174·2
	06·5							
4504·93	04·2		1	4505·07	0·73			22191·3
4502·76	01·8		1	4502·86	0·96			22202·0
4502·31			1					22204·2
4499·03	98·4		1	4499·35	0·63			22220·4
4497·86	96·2		1	4497·13	0·66			22226·2
4496·20			2					22234·4
4495·51			1					22237·8
†4494·67	93·8		8	†4494·71	0·87			22242·0
4493·95			1					22245·5
4493·42			1					22248·2
4492·84	92·0		1	4492·90	0·84			22251·0
4491·53			1					22257·5
4490·88	90·2		2	4491·02	0·68			22260·7
4490·19	89·3		4	4490·35	0·89			22264·2
4489·84	88·8		4		1·04			22265·9
4489·08	88·3		1	4489·37	0·78			22269·7
4488·26	87·5		2	4488·47	0·76			22273·7
4485·77	84·8		4	†4485·98	0·97			22286·1
4484·36	83·5		6	4484·47	0·86	1·34		22293·1
4483·32			1			1·33		22298·3
4482·86	82·0		1	4482·99	0·86			22300·6
4482·35	81·6		8	4482·37	0·75			22303·1
4481·72	81·0		1	4481·77	0·72			22306·3
4481·03			1					22309·7
4480·26	79·4		2	4480·30	0·86			22313·5
4479·73	78·8		2	4479·81	0·93			22316·2
4478·18			1					22323·9
4477·71			1					22326·2
4477·37			1					22327·9
4476·98			1					22329·9
4476·20	75·4		10	†4476·29	0·80			22333·8
4475·41			1					22337·6
4474·87			1					22340·4
4474·13			1					22344·1
4472·84			2	†4473·10			6·6	22350·6
4471·94			1				6·7	22355·0
4471·31			1					22358·1

†4494·725

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
4470·23			1					22363·5
4469·53	68·7		8	4469·64	0·83			22367·0
4468·44			1					22372·5
4467·96			1					22375·9
4467·55			1					22376·9
4466·70	66·0		8	†4466·97	0·70			22381·2
4465·96			1					22384·9
4465·39			1					22387·8
4464·88			4				6·7	22390·3
4463·66			1					22396·4
4463·33			1					22398·1
4462·11			4					22404·2
4461·75	61·2		6	4461·98	0·55			22406·0
4461·40			1					22407·8
4460·48			1					22412·4
4459·88			1					22415·4
4459·24	58·6		8	†4459·44	0·64			22418·6
4458·35			2					22423·1
4457·68			1					22426·5
4457·18			1					22429·0
4456·46	55·7		2	4456·69	0·76			22432·6
4455·85			1					22435·7
4455·20			1n					22439·0
4454·50	53·8		6	4454·76	0·70			22442·5
4453·53	52·8		1	4453·71	0·73			22447·4
4453·16			1					22449·3
4452·22			1					22454·0
4451·71			2					22456·6
4450·44	49·8		2	4450·81	0·64			22463·0
4448·66			1			1·33		22472·0
4447·85	47·2		8	4448·12	0·65	1·32		22476·1
4447·23			2					22479·2
4446·95	46·3		2	4447·21	0·65			22480·6
4446·47			1					22483·0
4446·16			1					22484·6
4445·61	45·0		1	4445·85	0·61			22487·4
4445·15			1					22489·7
4444·79			1					22491·5
4444·15			1					22494·8
4443·30	42·7		8	4443·57	0·60			22499·1
4442·97			1					22500·8
4442·46	41·7		8	4442·70	0·76			22503·3
4441·80			1					22506·7
4441·10	40·3		1	4441·32	0·80			22510·2
4440·56	39·9		1	4440·76	0·66			22513·0
4439·96	39·3		2	4440·22	0·66			22516·0
4439·40			1					22518·9
4438·50	37·8		2	4438·69	0·70			22523·4
4437·88			1					22526·6
4437·04	36·3		2	4437·29	0·74			22530·8
4436·50			1					22533·6
4435·27			4	†4435·42				22539·8
4433·98	33·2		2	4434·11	0·78			22546·4
4433·32	32 6		6	4433·53	0·62			22549·8
4432·68	32·0		2	4432·86	0·68			22553·0

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	1/λ −	
4432·06			1					22556·2
4431·43			1					22559·4
4430·74	30·2		8		0 54			22563·9
4430·32	29·6		2	4430·89	0·72			22565·0
4429·44			1	4430·30				22569·5
4428·74			1					22573·1
4428·17			1					22576·0
4427·44	26·7		8	4427·46	0·74			22579·7
4426·74			1					22583·3
4426·08			1					22586·6
4425·79			1	†4425·77				22587·1
4424·26			1					22595·9
4424·01	23·3		1		0·71			22596·2
4423·29	22·5		1	4423·32	0·79			22600·9
4422·67	21 8		8		0·87			22604·1
4422·02			1					22607 4
4421·37			1					22610·7
4418·43			1n					22625·8
4417·13			1					22632·4
4416·85			1					22633·9
4416·56			1					22635·4
4416·10			1					22637·7
4415·27	14·3		10	†4415·34	0·97			22642·0
4414·56			1					22645·6
4413·99			1					22648·5
4413·35			1			1·32		22651·8
4412·15			2			1·31		22658·0
4411·12			1					22663·3
4409·25			1					22672·9
4408·54	07·8		6	4408·37	0·74			22676·5
†4407·80	07·2		6	4407·85	0·60			22680·4
4406·74			1					22685·8
4406·07			1				6·7	22689·3
4404·88	04·3		10	†4405·00	0·58		6·8	22695·3
4403·60			1					22701·9
4402·95			1					22705·2
4401·46	00·7		6		0·76			22712·9
4400·72			1					22716·7
4400·02			1					22720·4
4398·84			1					22726·5
4396·76			1					22737·2
4395·39	94·5		2	†4395·45	0·89			22744·3
4392·66	92·2		1	4392·92	0·46			22758·4
4391·95			1					22762·1
4391·68			1					22763·5
†4391·09	90·5		6	4391·34	0·59			22766·6
4390·59	90·2		1	4390 88	0·39			22769·2
4390·10			2					22771·7
4389·35	88·8		2	4389·61	0·55			22775·6
4388·57	87·9		6	4388·80	0·67			22779·7
4388·01	87·4		4	4388·29	0·61			22782·6
4386·70			1n					22789·4
4385·40	84·9		1	4385·76	0·50			22796·1
4384·82	84·3		2	4385·12	0·52			22799·2
4384·38			1					22801·4

†4407·848 double 4391·152 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}$—	Oscillation Frequency in Vacuo
4383·70	83·0		10	†4383·70	0·70			22805·0
4382·88			2					22809·2
4380·60			1n					22821·1
4379·36			2					22827·6
4377·94			1			1·31		22835·0
4377·46	76·9		1	4377·69	0·56	1·30		22837·5
4376·89	76·4		2	4377·23	0·49			22840·5
†4376·04	75·6		8	4376·38	0·44			22844·9
4375·06	74·2		1	4374·92	0·86			22850·0
4374·59			1					22852·5
4373·67	73·3		2	4374·01	0·37			22857·3
4373·10	72·4		1	4373·23	0·80			22860·3
4371·51			1					22868·6
4371·09			1					22870·8
4370·59			1					22873·4
†4369·89	69·3		8		0·59			22877·1
4369·18			1					22880·8
4368·67			1					22883·5
4368·00	67·6		2	4368·36	0·40			22887·0
4367·68	67·2		6	†4368·07	0·48			22888·6
4366·89			1					22892·8
4366·02	65·5		1	4366·34	0·72			22897·3
4362·47	62·5		1	4363·21				22916·0
4360·91	60·5		1	4361·21	0·41			22924·2
4358·62	58·1		4	4358·91	0·52			22936·2
4356·94			1				6·8	22945·1
4353·60			1				6·9	22962·6
†4352·86	52·3		8	4353·12	0·56			22966·5
4352·57			1					22968·0
4351·67	51·0		4	4351·66	0·67			22972·8
4351·11			1					22975·7
4350·43			1n					22979·3
4349·87			1					22982·3
4349·07	48·6		2	4349·30	0·47			22986·5
4348·57			1n					22989·2
4347·99	47·4		2	4348·18	0·59			22992·2
4347·34			1					22995·7
4346·66	46·2		4	4346·88	0·46			22999·3
4345·17	44·2		1	4344·79	0·97			23007·2
4344·62			1					23010·1
4343·81	43·3		2	4343·96	0·51			23014·4
4343·39	42·7		2	4343·49	0·69	1·30		23016·6
4340·65	40·0		1	†4340·71	0·65	1·29		23031·1
4340·21			1					23033·5
4338·38	37·8		2	4338·55	0·58			23043·2
4338·05			1					23044·9
4337·71			1					23046·7
4337·14	36·6		10	4337·35	0·54			23049·8
4335·96			1					23056·0
4333·88	32·0		1	4332·72	1·88			23067·1
4331·89			1					23077·7
4331·02	30·6		1	4331·44	0·42			23082·3
4328·91			1					23093·6
4328·02	27·3		2	5328·34	0·72			23098·3
4327·22	26·6		4	4327·51	0·62			23102·6

†4376·102 4369·946 4352·910

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$ −	
4326·86	26·3		1	4327·20	0·56			23104·5
†4325·92	25·3		10	†4325·98	0·62			23109·6
4325·19			1					23113·5
4324·66			1					23116·3
4322·93			1					23125·5
4321·90	21·4		2	4322·20	0·50			23131·1
4320·89	20·2		1	4321·23	0·69			23136·5
4319·88			1					23141·9
4318·78			1					23147·8
4318·22			1					23150·8
4317·10			1					23156·8
4316·21			1n					23161·6
4315·83			1					23163·6
4315·21	14·6		10	4315·56	0·61			23166·9
4314·43			1					23171·1
4313·91			1					23173·9
4312·28			1					23182·7
4311·12			1					23188·9
4310·52	10·0		1	4310·98	0·52			23192·2
4309·50	09·2		6	4309·20	0·30			23197·6
4309·14			2					23199·6
G4307·96†	07·3		10	†4308·25	0·63			23205·9
4306·80			1					23212·2
4306·11			1					23215·9
4305·58	04·7		6	4305·71	0·88			23218·8
4305·32			1			1·29		23220·2
4304·66	04·0		1	4305·05	0·26	1·28		23223·7
4303·87			1					23226·0
4303·25			1					23231·3
4302·68			1					23234·4
4302·31	01·7		2	4302·75	0·61			23236·4
4301·16			1					23242·6
4300·86			1					23244·3
4300·29			1					23247·3
4299·42	98·8		10	4299·77	0·62			23252·0
4298·16	97·6		4	4298·58	0·56			23258·9
4297·46			1					23262·7
4296·56			1					23267·5
4296·13			1					23269·9
4295·83			1					23271·5
4295·45			1					23273·5
4295·08			1					23275·6
4294·26	93·7		10	4294·64	0·56			23280·0
4293·61			1					23283·5
4293·07			1n					23286·4
4292·49			1					23289·6
4292·36	91·7		2	4292·61	0·66			23290·3
4291·69	91·2		4	4292·02	0·49		6·9	23293·9
4290·99	90·5		1	4291·45	0·49		7·0	23297·6
4290·50	89·9		2	4290·77	0·60			23300·3
4290·04			1					23302·8
4289·84			2	†4289·87				23303·9
4289·08	88·7		2	4289·54	0·38			23308·0
4288·25	87·7		4	4288·63	0·55			23312·5
4287·05	86·7		2	4287·44	0·35			23319·2

†4325·982 triple   4308·023 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Angström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
4286·58	86·2		1	4286·99	0·38			23321·6
4286·22			1					23323·6
4286·02			1					23324·7
4285·57	85·2		6	4285·92	0·37			23327·1
4285·20			1					23329·1
4284·90			1					23330·8
4284·55			1n					23332·7
4284·20			1n					23334·6
4283·73			1					23337·1
4283·35			1					23339·2
4283·20			1					23340·0
4282·58	82·1		10	4282·87	0·48			23343·4
4281·86			1					23347·3
4281·24			1					23350·7
4280·68	80·0		1	4280·87	0·68			23353·8
4279·99	79·4		1	4280·20	0·59			23357·5
4279·59	79·2		1	4279·94	0·39			23359·7
4279·01			1					23362·9
4278·35	77·9		2	4278·66	0·45			23366·5
4277·80	77·3		1	4278·02	0·50			23369·5
4277·34			1					23372·0
4276·80	76·4		2	4277·10	0·40			23375·0
4275·79	75·3		1	4275·91	0·49			23380·5
4275·27			1					23383·3
4274·87	73·7		2	4274·25	1·17			23385·5
4273·99			1					23390·3
4273·16			1					23394·9
4272·61			1					23397·9
4271·93	71·6		10	4272·17	0·33			23401·6
4271·30	71·0		10	4271·54	0·30			23405·1
4270·65			1					23408·6
4270·13			1					23411·5
4269·89			1					23412·8
4269·50			1			1·28		23414·9
4268·87	68·6		4	4269·12	0·27	1·27		23418·4
†4267·97	67·6		6	4268·14	0·17			23423·3
4267·08	66·7		4	4267·35	0·38			23428·2
4266·69			1					23430·4
4266·09			1					23433·7
4265·37	65·2		2	4265·65	0·17			23437·6
4264·88			1					23440·3
4264·37	64·1		2	4264·63	0·27			23443·1
4261·48			2					23459·0
4260·64	60·2		10	†4260·73	0·44			23463·6
4260·21			1					23466·0
4259·63			1					23469·2
4259·39			1					23470·5
4259·06			2					23472·4
4258·75	58·4		2	4259·00	0·35			23474·1
4258·43	58·0		2	4258·60	0·43			23475·8
4257·80			1n					23479·3
4257·18			1n					23482·7
4256·82			1					23484·7
4256·32			1					23487·5
4256·00			1					23489·2

†4267·941 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
4255·64	55·3		2	4255·92	0·14			23491·2
4255·08			1					23494·3
†4254·45	54·6		2	4255·28				23497·8
4254·13	53·6		1	4254·22	0·53			23499·6
4253·89			1					23500·9
4253·25			1					23504·4
4252 27			1					23509·8
4250·93	50·5		10	4251·13	0·43			23517·3
4250·28	49·8		10	4250·45	0·48			23520·9
4249·07			1					23527·6
4248·77			1					23529·2
4248·35	47·9		4	4248·60	0·45			23531·5
4247·60	47·1		8	4247·72	0·50			23535·7
4246·60			1					23541·2
4246·18	45·7		4	4246·36	0·48			23543·6
4245·39	44·9		6	4245·59	0·49			23548 0
4244·38			1					23553·6
4243·89	43·4		1	4244·13	0·49			23556·3
4243·44	43·0		2	4243·67	0·44			23558·8
4242·85	42·3		2	4242·98	0·55			23562·1
4242·44			1					23564·3
4241·90			1					23567·3
4241·20	40·7		1	4241·41	0·50			23571·2
4240·79			1					23573·5
4240·50			2					23575·1
4239·90	39·4		6	4240·11	0·50			23578·5
4238·98	38·5		8	4249·10	0·48			23583·6
4238·14	37·7		4	4248·32	0·44			23588·3
4237·26	36·8		2	4237·45	0·46			23593·1
4236·84			1n					23595·5
4236·09	35·6		10	†4236·21	0·49			23599·7
4235·41			2					23603·5
4235·01			1					23605·7
4234·51			1			1·27		23608·5
4233·76	33·3		10	4233·87	0·46	1·26		23612·7
4233·25			1					23615·5
4232·93			1					23617·3
4232·57			1					23619·3
4231·32			1					23626·3
4230·75			1					23629·5
4230·36			1n					23631·6
4229·86			1					23634·4
4229·61	29·0		2	4229·72	0·61			23635·8
4228·98			1n					23639·4
4227·60	27·0		10	4227·67	0·60		7·0	23647·1
4226·84			4				7·1	23651·2
4226·52	25·9		4	4226·65	0·62			23653·0
4226·08	25·5		4	4226·25	0·58			23655·5
4225·61	25·0		6	4225·69	0·61			23658·1
4224·63	24·1		2	4224·76	0·53			23663·6
4224·27	23·7		6	4224·43	0·57			23665·6
4223·40			1					23670·5
4222·32	21·8		8	4222·45	0·52			23676·6
4221·36			1					23681·9
4220·44	19·8		4	4220·59	0·64			23687·1

†4254·190

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$−	
4219·99			1					23689·6
4219·47	18·8		8	4219 59	0·67			23692·6
4218·48			1					23698·1
4217·69	17·2		6	4217·80	0·49			23702·6
4216·28	15·7		6	4216·45	0·58			23710·5
4216·08			1					23711·6
4215·52			4					23714·8
4213·75	13·2		4	4213·85	0·55			23724·7
4213·38			1					23726·8
4212·61			1					23731·2
4210·48	09·8		8	4210·59	0·68			23743·2
4208·71	08·2		4	4208·83	0·51			23753·1
4207·93			1					23757·5
4207·22	06·7		4	4207·38	0·52			23761·6
4206·78	06·3		2	4206·90	0·48			23764·0
4205·63	05·0		2	4205·73	0·63			23770·5
4205·12			1					23773·4
4204·07	03·5		6	4204·21	0·57			23779·4
4203·63			1n					23781·9
4203·27			1					23783·9
4202·85			2					23786·3
4202·15	01·6		10	†4202·33	0·55			23790·2
4201·31			1					23795·0
4201·01	00·3		4	4200·98	0·71			23796·7
4200·01			1					23802·4
†4199·19	98·7		10	4199·33	0·49			23807·0
4198 75			2					23808·5
4198·42	97·7		10	4198·46	0·72	1·26		23811·4
4197·32			1n			1·25		23817·6
4196·66			2					23821·4
4196·31	95·7		6	4196·46	0·61			23823·4
4195·71	95·3		2		0·41			23826·8
4195·46			6					23828·2
4194·56			2					23833·3
4193·70			1					23838·2
4193·35			1					23840·2
4192·62			1					23844·3
4192·22			1					23846 6
4191·72			1					23849·4
4191·57	90·9		10	4191·65	0·67			23850 3
4190·89			1					23854·2
4190·48			1					23856·5
4190·07			1					23858·8
4189·67			2					23861·1
4188·99			1					23865·0
4188·66			1					23866·9
4187·92	87·3		10	4188·32	0·62			23871·1
4187·17	86·6		10	4187·31	0·57			23875·4
4186 20			1					23880·9
4185·72			1					23883·6
†4184·99	84·4		8	4185·12	0·59			23887·8
4184·31			1					23891·7
4183·11			1					23898·6
4182 85			1					23900·0
4182·46	81·8		6	4182·58	0·66			23902·3

†4199·254 4185·054

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ—	Oscillation Frequency in Vacuo
4181·85	81·3		8	4182·00	0·55			23905·8
4181·16			1					23909·7
4180·60			1					23912·9
4179·93			1					23916·7
4179·46			1					23919·4
4178·95			1					23922·4
4178·64			1					23924·1
4178·11			1					23927·2
4177·66	77·2		6	†4178·07	0·46			23929·7
4177·16			1					23932·6
4176·62	76·0		6	4176·80	0·62			23935·7
4175·71	75·2		8	4175·85	0·51			23940·9
4174·98	74·3		6	4175·10	0·68			23945·1
4174·47			1					23948·0
4174·00	73·4		4	4174·20	0·60			23950·7
4173·52			1					23953·5
4173·39	72·8		4	4173·66	0·59			23954·2
4172·81	72·2		6	4172·88	0·61			23957·6
4172·66			1					23958·4
4172·20	71·5		8	4172·26	0·70			23961·1
4171·99			1					23962·3
4171·79			2					23963·4
4170·99	70·4		8	4171·21	0·59			23968·0
4170·42			1					23971·3
4169·90			1					23974·3
4169·03	68·4		2	4169·20	0·63			23979·3
4168·71			1					23981·1
4168·33			1					23983·3
4167·96	67·3		1	4168·16	0·66			23985·4
4167·38			1					23987·8
4165·51	64·8		2	4165·71	0·71			23999·6
4164·89			1				7·1	24003·1
4163·74	63·0		2	4163·88	0·74		7·2	24009·7
4162·63			1					24016·1
4162·19			1					24018·6
4161·57	60·9		2	4161·75	0·67			24022·2
4161·13			2					24024·7
4160·59			1					24027·8
4160·31			1					24029·5
4159·36			1			1·25		24035·0
4158·89	58·2		6	4159·04	0·69	1·24		24037·7
†4157·91	57·2		6	4158·03	0·71			24043·3
4157·46			1					24045·9
4156·88	56·2		8	4157·02	0·68			24049·3
4156·13			1					24053·6
4154·95	54·2		6	4155·05	0·75			24060·5
4154·57	53·8		6	4154·74	0·77			24062·7
4154·04	53·2		6	4154·15	0·84			24065·7
4153·47			1					24069·0
4152·78			1					24073·1
4152·25	51·4		4	†4152·34	0·85			24076·1
4152·04			2					24077·3
4151·34			1					24081·4
4150·42	49·7		4	4150·56	0·72			24086·7
4149·44	48·6		6	4149·56	0·84			24092·4

†4157·936

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda +$	$\frac{1}{\lambda} -$	
4147·74	47·0		8	4147·93	0·74			24102·3
4146·70			1n					24108·4
4146·12	45·4		4	4146·32	0·72			24111·7
4145·29			1					24116·6
4144·72			1					24119·9
4143·96	43·2		10	4144·14	0·76			24124·3
4143·50	42·7		10	4143·71	0·80			24127·0
4142·74			2					24131·4
4142·31			1					24133·9
4141·94	41·2		2	4142·11	0·74			24136·1
4141·51			1					24138·6
4141·11			1					24140·9
4140·54			2					24144·2
4139·96	39·2		2	4140·20	0·76			24147·6
4138·99			1					24153·3
4138·15			1					24158·2
4137·66			1					24161·2
4137·06	36·3		8	4137·25	0·76			24164·6
4136·58			1					24167·4
4135·98			1n					24170·9
4135·43			1					24174·1
4134·77	34·0		10	4134·92	0·77			24177·9
4134·50			2					24179·5
4133·96	33·2		4	4134·12	0·76			24182·7
4133·67			1					24184·4
4132·96	32·2		8	4133·17	0·76			24188·5
4132·15	31·3		10	†4132·43	0·85			24193·3
4131·14			1					24199·2
4130·58			1					24202·5
4130·08			1					24205·4
4129·71			1					24207·6
4129·28			1					24210·1
4128·91			1					24212·3
4127·86			2					24218·4
4127·68	26·9		6	4127·95	0·78			24219·5
4126·95			1			1·24		24223·8
4126·25	25·5		4	4126·45	0·75	1·23		24227·9
4125·94			2					24228·7
4125·71			2					24231·0
4125·17			1					24234·2
4124·76			1					24236·6
4124·35			1					24239·0
4123·81	23·2		4	4124·04	0·61			24242·2
4123·16			1					24246·0
4122·59	21·8		6	4122·85	0·79			24249·4
4121·88	21·1		6	4122·07	0·78			24253·6
4121·48			1					24255·9
4120·59			1					24261·2
4120·28	19·5		6	4120·49	0·78			24263·0
4119·84			1					24265·6
4119·45			2					24267·9
4119·00			2				7·2	24270·5
4118·62	17·8		10	†4119·02	0·82		7·3	24272·7
4118·00			2					24276·3
4117·75			1					24277·8

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$−	
4117·41			1					24279·8
4116·86			1					24283·1
4116·22			1					24286·8
4115·78			1					24289·4
4115·34			2					24292·0
4114·98			2					24294·2
†4114·53	13·7		6	4114·74	0·83			24296·8
4113·89			1					24300·6
4113·52			1					24302·8
4113·08	12·3		4	4113·24	0·78			24305·4
4112·47			2					24309·0
4111·85			2					24312·7
4111·17			1					24316·7
4110·41			1					24321·2
4109·88	09·2		8	4110·09	0·68			24324·3
4109·23			4					24328·2
4108·23			1					24334·1
†4107·58	06·8		8	4107·76	0·78			24337·9
4106·55			4					24344·0
4106·37	05·7		4	4106·63	0·67			24345·1
4105·28			2					24351·6
4105·04			1					24353·0
4104·70			1					24355·0
4104·20	03·5		6	4104·40	0·70			24358·0
4103·44			1					24362·5
4102·50			1					24368·1
4101·76			2	†4101·98				24372·5
4101·37			4					24374·8
4100·82	00·2		6	4101·00	0·62			24378·1
4100·26			4					24381·4
4099·87			2					24383·7
4099·04			1					24388·6
4098·26	97·6		8	4098·41	0·66			24393·3
4097·19			1					23399·7
4096·67			1n					24402·8
4096·06	95·6		8	4096·29	0·46			24406·4
4095·35			1					24410·6
4094·57			1					24415·3
4093·28			1					24423·0
4092·60			4	4092·83				24427·0
4092·43			4					24428·1
4092·11			1					24430·0
4091·66			4					24432·7
4091·34			1					24434·6
4091·12			4			1·23		24436·1
4090·17			1			1·22		24441·6
4089·28			4					24446·9
4088·65			1					24450·6
4087·95			1					24454·8
4087·50			1					24457·5
4087·16	86·5		2	4087·35	0·66			24459·6
4086·54			1					24463·3
4086·06			1					24466·2
4085·38	84·7		6	4085·53	0·68			24470·2
4085·07	84·4		6	4085·27	0·67			24472·1

†4114·593 4107·636

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				λ+	$\frac{1}{\lambda}$−	
4084·59	83·9		8	4084·75	0·69			24475·0
4083·90			4					24479·1
4083·70			4					24480·3
4083·03			4					24484·3
4082·55			2					24487·2
4082·20			2					24489·3
4081·67			1					24492·5
4081·35			1					24494·4
4080·96			2					24496·7
4080·30	79·7		4	4080·47	0·60			24500·7
4079·91	79·3		6	4080·09	0·61			24503·0
4079·50			2					24505·5
4079·32			2					24506·6
4078·83			1					24509·5
4078·41	77·8		6	4078·65	0·61			24512·1
4077·74			1					24516·1
4077·36			1	†4077·48				24518·4
4076·72	76·0		8	4076·93	0·72			24522·2
4076·32			1					24524·6
4076·05			1					24526·3
4074·87	74·2		6	4075·01	0·67			24533·4
4074·49			1				7·3	24535·7
†4073·84	73·2		4	4074·03	0·64		7·4	24539·5
4073·35			1					24542·4
4072·62			2					24546·8
4071·79	71·0		10	†4071·86	0·79			24551·8
4070·85	69·7		6	4070·50	1·15			24557·5
4069·08			1					24568·2
4068·07	67·3		8	4068·21	0·77			24574·3
4067·36	66·7		6	4067·21	0·66			24578·6
4067·04	66·3		6		0·74			24580·5
4066·66			4					24582·8
4066·29			1					24585·0
4065·87			1					24587·6
4065·48			4					24589·9
4064·55			2					24595·6
4063·63	63·0		10	†4063·94	0·63			24601·1
4063·40			4					24602·5
4062·94			1					24605·3
4062·51	61·8		8	4062·73	0·71			24607·9
4062·00			1					24611·0
4061·24			1					24615·6
4060·88			1					24617·8
4059·80	59·2		4	4060·03	0·60			24624·3
4058·99			1n					24629·3
4058·86	58·2		4	4059·16	0·66			24630·1
4058·30			4					24633·8
4057·91	57·6		6		0·31			24635·8
4057·43	56·7		4n	4057·77	0·73			24638·7
4056·61			1					24643·7
4056·04			1					24647·2
4055·63			4			1·22		24649·7
4055·12			2			1·21		24652·8
4054·94	54·2		2	4055·18	0·74			24653·9
4054·25			1					24658·1

†4073·915

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén Vogel	Thalén Fievez	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ —	Oscillation Frequency in Vacuo
4053·87			1					24660·4
4053·31			1					24663·8
4052·75			2					24667·2
4052·56	51·7		1	4052·77	0·86			24668·4
4052·43			1					24669·1
4052·03			1					24671·6
4051·40			1					24675·4
4050·83			1					24678·9
4049·92			1					24684·4
4049·40			1					24687·6
†4048·82	48·2		2	4049·12	0·62			24691·2
4047·40			1					24699·8
4045·90	45·3		10	†4046·00	0·60			24709·0
4044·69	44·0		4	4044·94	0·69			24716·4
4044·00	43·3		4	4044·27	0·70			24720·6
4041·44	40·5		4		0·94			24736·3
4040·74	39·5		4		1·24			24740·5
4040·12			1					24744·3
4038·83			1n					24752·2
4035·76			2					24771·1
4034·59	33·9		6	4034·86	0·69			24778·3
4033·16	32·4		6	4033·47	0·76			24787·1
4032·72	32·0		2	4032·97	0·72			24789·8
4032·54			1					24790·9
4032·06	31·3		4	4032·38	0·76			24793·8
4031·33			1					24798·3
4030·84	30·0		6	†4030·85	0·84			24801·3
4030·60			4					24802·8
4030·26			1				7·4	24804·9
4029·72			2				7·5	24808·1
4027·63			1					24821·0
4025·93			1					24831·5
4024·86	24·0		4	4025·05	0·86			24838·1
4024·20			1					24842·2
4023·51			1					24846·4
4022·80			1					24850·8
4022·25			1					24854·2
4021·96	21·3		6	4022·27	0·66			24856·0
4021·69			1					24857·7
4020·54			1			1·21		24864·8
4019·75			1			1·20		24869·7
4019·13			1					24873·5
4018·79			1					24875·6
4018·36	17·5		2	4018·54	0·86			24878·3
4018·21			1					24879·2
4017·23	16·4		4	4017·53	0·83			24885·3
4016·55			1					24889·5
4015·40			1					24896·6
4014·63	13·6		6	4014·68	1·03			24901·4
4014·41			1					24902·8
4013·91	13·0		4	4014·22	0·91			24905·9
4013·75			1					24906·9
4011·81			1					24918·9
4011·49			1					24920·9
4011·05			1					24923·6

†4048·878 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Thalén		Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
	Vogel	Fievez				$\lambda+$	$\frac{1}{\lambda}-$	
4009·80	09·0		6	4010·08	0·80			24931·4
4008·97			1					24936·6
4007·36	06·6		4	4007·68	0·76			24946·6
4006·71			2					24950·6
4006·39	05·5		2	4006·67	0·89			24952·6
4005·33	04·3	04·3	8	†4005·46	1·03			24959·2
4005·07			1					24960·8
4004·96			1					24961·5
4003·88			2					24968·3
4002·77			1					24975·2
4001·77	00·9		4	4002·05	0·87			24981·4
4000·57	99·5		2	4000·59	1·07			24988·9
4000·36			1					24990·2
3998·76			1					25000·2
3998·16	97·2		6	3998·33	0·97			25004·0
3997·49	96·7	96·7	6	3997·77	0·79			25008·2
3997·25			1					25009·7
3997·06			2					25010·9
3996·42			1					25014·9
3996·08			4					25017·0
3995·34			1					25021·7
3994·22			4					25028·7
3990·48			4					25052·1
3989·94			2				7·5	25055·5
3986·27			6	†3987·04			7·6	25078·5
3985·46			4					25083·6
†3984·08			6	3984·23		1·20		25092·3
3983·47			1			1·19		25096·1
3981·87			6					25106·2
3981·21			1					25110·4
3979·73			1					25119·7
3978·91			1					25124·9
3978·55			1					25127·2
3977·83			8					25131·7
3977·66			1					25132·8
3976·95			1					25137·3
3976·71			2					25138·8
3976·47			1					25140·3
3976·00			1					25143·3
3975·33			1					25147·5
3974·81			1					25150·8
3974·46			1					25153·0
3974·10			1n					25155·3
3973·75			4					25157·5
3973·00			1					25162·1
3971·41			6					25172·4
3970·51			4					25178·1
3970·35			1					25179·1
3969·72			1					25182·1
3969·34		66·7	8	3969·52				25185·5
3968·55			4	†3968·79				25190·5
3968 05			2					25193·7
3967·51			4					25197·1
3966·70			4					25202·3
3966·16			4					25205·7

†3984 067 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3965·62		1					25209·1
3964·61		2					25215·6
3963·24		4	3963·61				25224·3
3962·80		1					25227·1
3962·42		1	3962·57				25229·5
3961·63		2					25234·5
3961·24		1					25237·0
3960·38		2	3960·46				25242·5
3958·48		1					25254·6
3958·29		1					25255·8
3957·80		1	3958·10				25259·0
3957·17		2					25263·0
3956·77	55·9	6		0·87			25265·5
3956·54		4					25267 0
3956·05		4	3956·12				25270·1
3955·50		2					25273·6
3954·78		1					25278·3
3953·93		1					25283·7
3953·25		4	3953·65				25288·0
3952·71		6	†3953·00				25291·5
3951·25		6					25300·8
3950·05		6	3949·27		1·19		25308·5
3949·25		1			1·18		25313·7
3948·87		6					25316·1
3948·23		4					25320·2
3947·64		4	3947·87				25324·0
3947·11		2	3947·48				25327·4
3945·22		2	3945·47				25339·5
3945·00		2	3945·28				25340·9
3944·82		1					25342·1
3944·11		2					25346·7
3943·43		2					25351·0
†3942·54		6	3942·92				25356·8
3941·40		2					25364·1
3940·98		6	3941·36				25366·8
3940·14		1					25372·2
3938·59		1					25382·2
3938·16		1					25385·0
3937·42		4					25389·7
3935·92		6	3936·00				25399·4
3935·40		2					25402·8
3934·81		1					25406·6
3934·47		1					25408·8
3933·75	32·9	6	3933·79	0·85			25413·4
3933·01		1					25418·2
3932·71		2					25420·3
3931·22		2					25429·8
3930·37	29·8	8	3930·44	0·57			25435·3
3929·24		2	3939·31				25444·6
3928·17		1					22449·5
3928·05	27·3	8	3938·27	0·75		7·6	25450·3
3926·05		4				7·7	25463·2
3925·74		4					25465·2
3925·31		1					25468·0
3923·00	22·0	8	3923·04	1·00			25483 0

†3942·555 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3921·34		1					25493·8
3920·93		1					55496·4
3920·36	18·4	6	3920·41	1·96			25500·2
3919·18		2	3919·28				25507·8
3918·74		4	3918·82				25510·7
3918·49	17·8	4		0·69			25512·3
3917·29		6	3917·36				25520·1
†3916·82		6	3916·92				25523·2
3914·35		1	3914·55				25539·3
3913·74		4	3913·87		1·18		25543·3
3910·95		2			1·17		25561·5
3909·95		4	3910·14				25568·1
3909·78		1	3909·89				25569·2
3909·40		1	3909·50				25571·7
3908·02		4	3908·20				25580·7
3907·58		1	3907·75				25583·6
3906·84		2	3907·02				25588·4
3906·58	05·9	6	3906·74	0·68			25590·1
3905·64		1	†3905·87				25596·3
3904·00		6	3904·16				25607·0
3903·06	01·9	8	3903·24	1·16			25613·2
3902·43		1	3902·60				25617·4
3900·64		2	3900·86				25629·1
3899·80	98·4	6	3900·04	1·40			25634·6
3899·13		2					25639·0
3898·73		1					25641·7
3898·05	97·0	6	3898·32	1·05			25646·1
†3897·54		2	3897·82				25649·5
3895·75	94·7	6	†3895·78	1·05			25661·3
3894·56		1					25669·1
3894·09		2					25672·2
3893·47	92·6	4		0·87			25676·3
3893·00		1					25679·4
3892·54		1					25682·5
3892·02		4					25685·9
3890·94		4					25693·0
3890·49		1					25696·0
3890·02		1					25699·1
3888·92	88·0	4		0·92			25706·4
3888·63	87·4	6		1·23			25708·3
3887·17	86·4	6		0·77			25717·9
3886·38	86·0	6		0·38			25723·2
3885·61	84·7	4		0·91			25728·3
3885·25		1					25730·7
3884·46		4					25735·9
3883·39		4					25743·0
3882·11		1					25751·5
3878·82	80·3	8		–1·48			25773·3
3878·63		2					25774·6
3878·12	77·4	8		0·72	1·17		25778·0
3876·81		1			1·16		25786·7
3876·14		4					25791·2
3874·95		1					25799·1
3874·55		1					25801·7
3874·18		1					25804·2

†3916·880 3897·605

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
3873·88		6					25806·2
3873·69		1					25807·5
3873·04		1					25811·8
3872·61	71·3	8		1·31			25814·7
3871·86	70·6	4		1·26			25819·7
3871·36		1					25823·0
3869·69		4				7·7	25834·2
3868·71		1				7·8	25840·6
3868·37		1					25842·9
3868·03	65·5	2		2·53			25845·1
3867·33	65·2	6		2·13			25849·8
3865·65	64·8	8		0·85			25861·1
3864·42		1					25869·3
3864·16		1					25871 0
3863·87		4					25873·0
3861·69		1					25887 6
3861·46	60·6	4		0·86			25889·1
3860·03	59·3	10		0·73			25898 7
3859·34		6					25903·4
3856·49	55·7	8		0·79			25922·5
3856·00		1					25925·8
3855·45		1					25929·5
3854·51	53·7	2		0·81			25935·8
3853·60	52·7	1		0·90			25942·0
3852·71	51·8	6		0·91			25947·9
3850·96	50·0	6		0·96			25959·7
3850·11	49·7	8		0·41			25965 5
3848·42		1					25976·9
3846·96	45·9	6		1·06			25986·7
3846·55		2					25989·5
3846·18		1					25992·0
3845·84		1					25994·3
3845·58		1					25996·1
3845·30	44 6	4		0·70			25998·0
3844·08		1					26006·2
3843·40	41·9	6		1·50	1·16		26010·8
3843·04		1					26013·3
3841·19	40·5	8		0·69	1·15		26025·8
3840·58	40·1	8		0·48			26029·9
3839·78		1					26035·4
3839·38	38·5	6		0·88			26038·1
3838·87		1					26041·9
3837·27		2					26052·4
3836·48		6					26057 8
3834·37	33·6	8		0·77			26072·1
3833·44		4					26078·4
3830·95		2					26095 5
3830·54		1					26098·2
3830·29		1					26099·9
3829·86		2					26102·8
3829·59		1					26104·7
3829·30		1					26106·6
3829·02		1					26108·5
3828·65		1					26111·1
3827·96	27 7	8		0·26			26115·8

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	1/λ −	
3827·72		2				7·8	26117·4
3826·99		1				7·9	26122·3
3826·04	25·3	8		0·74			26128·8
3825·54		1					26132·2
3824·58	24·1	8		0·48			26138·8
3824·24		1					26141·1
3823·66		1					26145·1
3822·39		1					26153·7
3821·98		2					26156·5
3821·71		1					26158·4
3821·32		4					26161·1
L 3820·56	19·7	8		0·86			26166·3
3819·75	19·2	1		0·55			26171·8
3818·77		1					26178·5
3818·43		1					26180·9
3817·84		1					26184·9
3817·11		1					26189·9
3816·48	16·9	4		−0·42			26194·3
3815·97	15·3	8		0·67			26197·9
3814·94		1					26204·8
3814·66	14·0	4		0·66			26206·8
3814·03		2					26211·1
3813·77		2					26212·9
3813·12	12·6	8		0·52			26217·3
3812·03		4					26224·8
3811·19		1					26230·6
3810·89		4					26232·7
3809·70		2					26240·9
3809·20		1					26244·3
3808·86		4					26246·7
3808·43		1					26249·6
3807·68		4					26254·8
3807·39		1					26256·8
3806·84		6					26260·6
3806·36		2					26263·9
3806·12		1					26265·6
3805·82		1					26267·6
3805·47	05·0	6		0·47	1·15		26270·1
3804·15		1			1·14		26279·2
3802·41		2					26291·2
3801·92		1					26294·6
3801·81	02·0	4		−0·19			26295·3
3801·54		1					26297·2
3801·15		2					26299·9
3799·68	99·4	6		0·28			26310·1
3798·65	98·7	6		−0·05			26317·2
3798·09		1					26321·1
3797·65	96·8	6		0·85			26324·2
3797·04		1					26328·4
3796·67		1					26331·0
3796·12		1					26334·8
3795·66		1					26338·0
3795·13	94·9	8		0·23			26341·7
3794·46	93·3	4		1·16			26346·3
3793·99		1					26349·6

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	1/λ −	
3793·60		1					26352·3
3793·48		1					26353·1
3792·96		1					26356·7
3792·62	92·7	1		−0·08			26359·1
3792·28	92·2	2		0·08			26361·5
3791·89		1					26364·2
3791·65		1					26365·8
3791·28		1n					26368·4
3790·88		1					26371·2
3790·22	90·5	6		−0 28			26375·8
3789·31	89·8	4		−0·49			26382·1
3788·01	87·1	6		0·91			26391·2
3787·30		1					26396·1
3786·81	86·2	4		0·62		7·9	26399·5
3786·30		4				8·0	26403·0
3786·07	85·4	4		0·67			26404·6
3785·83		1					26406·3
3782·74		2					26427·9
3782·56		2					26429·1
3782·23		1					26431·4
3782·05		2					26432·7
3781·31		4					26437·9
3779·58		6					26449·9
3779·32		1					26451·8
3778·82		1					26454·6
3778·63		4					26456·6
3778·45		1					26457·9
3777·56		2					26464·1
3777·20		1					26466·6
3776·58		4					26471·0
3775·93		1					26475·5
3774·95		4					26482·4
3773·84		2					26490·2
3773·51		1					26492·5
3770·43		2					26514·2
3770·12		2			1·14		26516·3
3768·15		2			1·13		26530·2
3767·31	66·8	8		0·51			26536·1
3766·74		1					26540·1
3766·19		1					26544·0
3765·66	65·0	8		0·66			26547·8
3763·90	63·4	8		0·50			26560·2
3762·30		1					26571·5
3761·52		1					26577·0
3760·66		4					26583·1
3760·17		4					26586·5
3759·30		1					26592·7
3758·36	57·7	8		0·66			26599·3
3757·60		1					26604·7
3757·06		2					26608·5
3756·17		1					26614·9
†3754·63		1					26625·8
3753·74	53·4	4		0·34			26632·1
3753·27		1					26635·4
3752·57		1					26640·4

†3754·652 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3751·97		1					26644·7
3749·61	49·5	8		0·11			26661·4
3749·06		2					26665·3
3748·39	48·2	6		0·19			26670·1
†3747·09		4					26679·4
3746·56		1				8·0	26683·1
3745·95		6				8·1	26687·4
3745·67	45·5	8		0·17			26689·4
3744·21		2					26699·8
3743·58		4					26704·3
3743·45	42·9	6		0·55			26705·2
3742·77		2					26710·1
3740·44		2					26726·7
3740·22		1					26728·3
3739·73		2					26731·8
3739·45		1					26733·8
3739·22		1					26735·4
3738·44		6					26741·0
3737·27	36·5	8		0·77			26749·4
3735·45		6					26762·4
3735·00	34·4	8		0·60			26765·7
3733·46	33·2	4		0·26			26776·7
3732·54	32·4	6		0·14	1·13		26783·3
3731·51		2			1·12		26790·9
3731·07		2					26793·9
3730·53		4					26797·7
3728·81		1					26810·1
M{3727·78	27·0	6		0·78			26817·5
M{3727·13	26·7	4		0·43			26822·2
3725·62		1					26833·1
3724·51	24·1	6		0·41			26841·1
3722·69	21·9	6		0·79			26854·2
3722·07		1					26858·7
3721·69		2					26861·4
3721·57		1					26862·3
3721·41		1					26863·4
3720·07	19·7	10		0·37			26873·1
3718·55		4					26884·1
3716·59	16·4	6		0·19			26898·3
3716·04	15·5	4		0·54			26902·3
3711·54		1					26934·9
3711·35		2					26936·3
3709·79		1					26947·6
3709 66		1					26948·5
3709·37	09·0	6		0·37			26950·7
3708·72		1					26955·4
3708·03	07·8	6		0·23			26960·4
3707·73		1					26962·6
3707·60		1				8·1	26963·5
3707·18	07·5	4		−0·32		8·2	26966·5
3705·70	05·5	4		0·20			26977·2
3704·59	03·7	6		0·89			26985·3
3703·96		2					26989·9
3703·83		1					26990·9
3703·68	03·2	4		0·48			26992·0

†3747·094 double

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ –	
3702·63		1					26999·6
3702·16		2					27003·1
3701·20	00·8	6		0·40			27010·1
3699·23		1					27024·4
3698·73		2					27028·1
3698·17		1					27032·2
3697·58		4			1·12		27036·5
3695·68		1			1·11		27050·4
3695·18		4					27054·1
3694·13	93·7	6		0·43			27061·8
3693·16		1					27068·9
3692·79		1					27071·6
3691·49		1					27081·1
3691·19		1					27083·3
3690·86		2					27085·8
3690·60		1					27087·7
3690·23		1					27090·4
3689·98		1					27092·2
3689·58		4					27095·2
3688·65		1					27102·0
3687·77	87·2	6		0·57			27108·5
3687·58		6					27109·9
3687·21		1					27112·6
3686·65		1					27116·7
3686·40		1					27118·5
3686·10	85·8	6		0·30			27120·7
3684·24	85·0	4		0·76			27134·4
3683·77	83·9	2		0·13			27137·9
3683·18		1					27142·2
3682·35	81·7	6		0·65			27148·4
3681·79		1					27152 5
3681·35		1					27155·7
3680·90		2					27159·1
3680·03	80·3	4		–0·27			27165·5
3679·49		1					27169·5
3679·13		1					27172·1
3678·99		2					27173·2
3677·76	77·6	4		0·16			27182·3
3677·60		1					27183·4
3677·42		2					27184·8
3677·03		1					27187·7
3676·44		4					27192·0
3675·29		1					27200·5
3674·89		1					27203·5
3674·55		1					27206·0
3674·12		1					27209·2
3673·19		1					27216·1
3672·85		1					27218·6
3671·80		1					27226·4
3671·64		1					27227·6
3670·95		1					27232·7
3670·20		4					27238·3
3669·65	69·3	6		0·35			27242·4
3669·29		2					27245·0
3669·04		1					27246·9

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3668·82		1					27248·5
3668·68		1					27249·6
3668·35		1					27252·0
3668·11		2				8·2	27253·8
3667·45		2				8·3	27258·6
3666·99		1					27262·0
3666·41		1					27266·3
3665·90		1					27270·1
3665·33		1					27274·4
3664·74		2					27278·8
3664·10		1					27283·5
3663·60		1					27287·3
3663·41	62 4	1		1·01			27288·7
3663·04	62·0	1		1·04			27291·4
3661·52		1					27302·8
3661·08		1					27306·0
3660·53		1			1·11		27310·1
3659·65	56·2	6		3·45	1·10		27316·7
3658·68		1					27324·0
3658·07		1					27328·5
3657·66		1					27331·6
3657·27		1					27334·5
3656·37		1					27341·2
3655·93		1					27344·5
3655·60		4					27347·0
3655·12		1					27350·6
3654·83		1					27352·7
3654·11		1					27358·1
3653·90		1					27359·7
3651·61	51·7	6		–0·09			27376·9
3650·64		1					27384·2
3650·42	49·4	4		1·02			27385·8
3650·14		2					27387·9
3649·65	48·6	4		1·05			27391·6
3649·44		1					27393·2
3647·99	46·9	8		1·09			27404·0
3647·57		1					27407·2
3645·96		4					27419·3
3645·63		1					27421·8
3645·22		1					27424·9
3644·97		1					27426·8
3644·73		1					27428·6
3643·80		4					27435·6
3640·53		6					27460·2
3638·44	37·7	4		0·74			27476·0
3637·98		1					27479·5
3637·39		1					27483·9
3637·16		1n					27485·7
3636·73		1n					27488·9
3636·32		2					27492·0
3635·39		1n					27499·1
3634·80		1					27503·5
3634·48	33·8	4		0·68			27506·0
3633·98		1					27409·7
3633·16		2					27515·9

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3632·71		1					27519·4
3632·20		4					27523·2
3631·62	30·9	6n		0·72			27527·6
3631·23		4					27530·6
3630·50		4				8·3	27536·1
3628·97		1				8·4	27547·6
3628·22		1					27553·3
3627·91		1					27555·7
3827·19		1					27561·2
3626·64		1					27565·3
3626·31		1					27567·8
3625·30	23·7	4		1·60			27575·5
3624·95		1					27578·2
3624·46		1					27581·9
3623·94		1					27585·9
3623·58		1					27588·6
3623·33	22·7	6		0·63	1·10		27590·5
3622·15	21·0	6		1·15	1·09		27599·5
3621·87		1					27601·6
3621·61	20·6	6		1·01			27603·6
3621·24		1					27606·4
3620·62		1					27611·2
3620·37		1					27613·1
3619·89		1					27616·7
3619·54		1					27619·4
3618·92	17·8	8		1·12			27624·1
3618·54		2					27627·0
3617·94	16·9	6		1·04			27631·6
3617·47		1					27635·2
3617·23		1					27637·1
3616·76		1					27640·7
3616·46		1					27642·9
3616·29		1					27644·2
3615·80		1					27648·0
3615·41		1					27651·0
3614·78		1					27655·8
3614·26		1					27659·8
3613·75		1					27663·7
3613·58		1					27665·0
3613·26		1					27667·4
3613·10		1					27668·7
3612·25		2					27675·2
3610·86		1					27685·8
3610·29	09·7	6		0·59			27690·2
3608·99	08·3	8		0·69			27700·2
3608·33		1					27705·3
3607·72		1					27709·9
3606·83	06·0	6		0·83			27716·8
3606·05		1					27722·8
3605·62	04·6	6		1·02			27726·1
3604·88		1					27731·8
3604·54		1					27734·4
3604·29		1					27736·3
3603·98		1					27738·7
3603·83		1					27739·9

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3603·71		1					27740·8
3603·59		1					27741·7
3603·34	02·1	4		1·24			27743·6
3602·64	01·8	2		0·84			27749 0
3602·23		1					27752·2
3599·77		2					27771·3
3599·30		1					27774·8
3599·12		1					27776·2
3598·85		1					27778·3
3597·84		1					27786·2
3597·22		2					27790·8
3596·35		2					27797·6
3596·03		1					27800·0
3595·78		1					27802·0
3595·43		1					27804·7
3594·71	94·0	6		0·71			27810·2
3593·62		1					27818·7
3593·46		1					27819·9
3592·97		1					27823·7
3592·83		1					27824·8
3592·61		1					27826·5
3592·13		1				8·4	27830·2
3591·48		1				8·5	27835·2
3591·13		1					27837·9
3590·80		1					27840·4
3590·21		1					27845·0
3589·73		1					27848·7
3589·58		2					27849·9
3589·25		4					27852·5
3589·05		1					27354·0
3588·75		2					27856·3
3587·87		2					27863·2
3587·55		2					27865·7
3587·34		1					27867·3
3587·10	86·2	8		0·90			27869·2
3586·62		1			1·09		27872·9
3586·24		6			1·08		27875·8
3585·84		4					27879·0
3585·43	84·9	4		0·53			27882·1
3585·33		2					27882·9
3585·08		4					27884·9
3584·78	84·1	6		0·68			27887·2
3583·74		1					27895·3
3583·45		2					27897·6
3582·76		1					27902·9
3582·32		4					27906·4
3581·94		1					27909·3
3581·73		1					27911·0
N 3581·32	80·6	10		0·72			27914·2
3578·80		2					27933·8
3578·49		1					27936·2
3578·03		2					27939·8
3576·89		2					27948·7
3576·11		1					27954·8
3575 49		4					27959·7

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda+$	$\frac{1}{\lambda}-$	
3575·37		1					27960·6
3575·22		1					27961·8
3574·00		6					27971·3
3573·52		2					27975·1
3272·79		1					27980·8
3572·12		6					27986·1
3571·34		2					27992·2
3570·45		4					27999·2
3570·23	68·9	10		1·33			28000·9
3569·60		1					28005·8
3569·09		2					28009·8
3568·94		1					28011·0
3568·53		1					28014·2
3567·52		1					28022·2
3567·15		2					28025·1
3566·70		1					28028·6
3566·46		2					28030·5
3565·72		4					28036·3
3565·50	64·1	10		1·40			28038·0
3564·61		1					28045·1
3564·22		1					28048·1
3560·81		2					28075·0
3559·62		2					28084·4
3559·39		1					28086·2
3559·18		1					28087·9
3558·62	58 1	8		0·52			28092·3
3556·99	56·0	8		0·99			28105·2
3555·04	54·0	10		1·04			28120·6
3554·62		1					28123·9
3554·24		4				8·5	28126·9
3553·84		4				8·6	28130·0
3553·58		1					28132·0
3553·29		1					28134·3
3552·95		4					28137·0
3552·58		1					28140·1
3552·24		2			1·08		28142·6
†3549·97		2			1·07		28160·6
3548·13		2					28175·3
3547·89		2					28177·2
3547·31		2					28181·8
3546·29		1					28189·9
3545·95		1					28192·6
3545·74		6					28194·3
3544·74		2					28202·2
3543·78		2					28209·8
3543·53		1					28211·8
3542·37		2					28221·1
3542·20	41·5	6		0·70			28222·4
3541·22	40·1	6		1·12			28230·3
3540·82	39·2	2		1·62			28233·4
†3540·24		2					28238·1
3538·87		1					28249·0
3538·68		1					28250·5
3538·48		1					28252·1
3538·01		4					28255·9

†3550·011 3540·266

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3537·84		4					28257·2
3537·60		2					28259·2
3536·65	35·4	6		1·25			28266·7
3535·01		1					28279·9
3534·63		1					28282·9
3533·30		6					28293·6
3533·08		4					28295·3
3532·71		1					28298·3
3532·17		1					28302·6
3531·90		1					28304·8
3531·56		1					28307·5
3530·48		2					28316·2
3529·90		4					28320·8
3529·63		1					28323·0
3529·44		1					28324·5
3527·90	27·0	6		0·90			28336·9
3526·76		4					28346·0
3526·51	25·7	6		0·81			28348·0
3526·25		6					28350·1
3526·08		2					28351·5
3525·97		1					28352·4
3524·62		2					28363·2
3524·34		2					28365·5
3524·15		2					28367·0
3523·38		1					28373·2
3522·97		1					28376·5
3522·37		2					28381·4
3521·93		2					28384·9
3521·36	20·6	8		0·76			28389·5
3520·95		1					28392·8
3520·14		1					28399·4
3518·96		2					28408·9
3518·80		1					28410·2
3517·19		1				8·6	28423·2
3516·66		1				8·7	28427·4
3516·50		2					28428·7
3515·39		1					28437·6
3515·15		2					28439·6
3514·72		1					28443·1
3513·91	13·7	8		0·21	1·07		28449·6
3513·15		1			1·06		28455·8
3513·05		1					28456·6
3512·78		1					28458·8
3512·30		1					28462·7
3511·80		1					28466·7
3511·49		1					28469·2
3510·76		1					28475·2
3510·52		4					28477·1
3510·43		1					28477·8
3509·95		2					28481·7
3509·23		1					28487·6
3508·58		4					28492·9
3507·23		1					28503·8
3506·59	05·8	4		0·79			28509·0
3506·39		1					28510·7

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3505·15		2					28520·7
3504·95		2					28522·4
3504·52		1					28525·9
3502·35		1					28543·6
3500·64	01·8	4		−1·16			28557·5
3498·84		1					28572·2
3497·92	96·8	6		1 12			28578·7
3497·20	95·9	6		1·30			28585·6
3496·27		1					28593·2
3495·96		1					28595·7
3495·37	94·5	4		0·87			28600·6
3494·76		1					28605·6
3494·24		1					28609·8
3493·78		2					28613·6
3493·37		1					28617 0
3493·04		2					28619·7
3492·68		1					28622·6
3490·65	91·9	8		−1·25			28639·3
3489·74	89·8	6		−0·06			28646·7
3489·49	88 9	1		0·59			28648·8
3486·63	88·0	1		−1·37			28672·3
3485·42	85·4	4		0·02			28682·2
3485·06		1					28685·2
3484·92		1					28686·4
3483·91		1					28694·7
3483·09		2					28701·4
3482·23		1					28708·5
3481·87		1					28711·5
3481·64		1				8·7	28713·4
3480·45		1				8·8	28723·1
3479·73		1					28729·1
3478·69		2					28737·6
3477·93		2			1·06		28743·9
3477·09		1			1·05		28750·8
3476·93		4					28752·2
3476·75	76·1	8		0·65			28753·7
3476·39		1					28756·7
3476·17		1					28758·5
3475·95		1					28760·3
3475·72		4					28762·2
3475·52	74·9	8		0·62			28763·9
3474·51		2					28772·2
3474·14		1					28775·3
3473·78		1					28778·3
3473·59		1					28779·9
3473·39		1					28781·5
3472·61		1					28788·0
3472·29		1n					28790·6
3472·06		1n					28792·5
3471·40	70·4	8		1·00			28798·0
3470·78		1					28803·2
3469·91		4					28810·4
3469·70		1					28812·1
3469·49		1					28813·9
3469·09		2					28817·2

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
3468·92		4					28818·6
3466·98		2					28834·7
3466·57		4					28838·2
3465·95	65·5	10		0 45			28843·3
3464·98		1					28851·4
3464·16		1n					28858·2
3463·39		1					28864·6
3462·87		1					28869·0
3462 43		2					28872·6
3461·73		2					28878·5
3461·15		1n					28883·3
3460 40		1					28889·6
3460·02	61·5	6		−1·48			28892·8
3459·83		1					28894·3
3459·51		2					28897·0
3458·55		2					28905·0
3458·39	57·8	4		0·59			28906·4
3457·53		1					28913·6
3457·15		1n					28916·8
3456·32		1n					28923·7
3455·41		1n					28931·3
3454·26		1					28941·0
3453·60		1					28946·5
3453·10	53·2	4		−0·1			28950·7
3452·35		6					28957·0
3451·99		6					28960·0
3451·71		2					28962·3
3450·41		6					28973·3
3447·37	45 7	6		1·67			28998·8
3447 00		1					29001·9
3446·86		1					29003·1
3446·34		2					29007·5
3445·87		1n					29011·4
3445·22	44·4	8		0·82		8·8	29016·9
3443·96	43·0	10		0·96		8·9	29027·4
3443·30		1n					29033·0
3443·03		1n					29035·3
3442 75		2					29037·6
3442·44	40·8	4		1·64			29040·3
3442·07		1			1·05		29043·4
o 3441·07	39·9	10		1·17	1·04		29051·8
3440·69	39·6	10		1·09			29055·0
3439·93		2n					29061·5
3439·09		1n					29068·6
3438·36		1n					29074·7
3438·02		2					29077·6
3437·68		1n					29080·5
3437·37		1n					29083·1
3437·11		2n					29085·3
3436·06		1n					29094·2
3433·64		4					29114·7
3433·09		1					29119·4
3431·90		4					29129·5
3428·81		1n					29155·7
3428·26		6					29160·4

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3427·21	26·7	8		0·51			29169·3
3426·71		6					29173·6
3426·44	25·4	6		1·04			29175·9
3425·08	24·8	6		0·28			29187·5
3424·36	22·8	10		1·56			29193·7
3423·79		1					29198·5
3422·69	20·9	10		1·79			29207·9
3419·76		4					29232·9
3419·25		1					29237·3
3418·91		1					29240·2
3418·58	16·0	8		2·58			29243·0
3418·28		1					29245·6
3417·92	15·5	8		2·42			29248·7
3417·30		1					29254·0
3416·65		1					29259·5
3416·30		1					29262·5
3415·61		6					29268·4
3414·83		4					29275·1
3413·22	11·8	10		1·42			29288·9
3412·43		1					29295·7
3411·43		4					29304·3
3411·22		1					29306·1
3410·98		1					29308·2
3410·26		6					29314·4
3409·22		2				8·9	29323·3
3408·52		1				9·0	29329·2
3407·55	06·1	10		1·45			29337·6
3406·88		6					29343·4
†3406·50		2					29346·6
3405·89		2					29351·9
3405·65		1					29354·0
3405·45		1					29355·7
3405·24		1					29357·5
3404·75		1					29361·7
3404·41	03·1	10		1·31	1·04		29364·7
3403·39		2			1·03		29373·5
3402·33		6					29382·6
3401·60		6					29388·9
3400·50		1					29398·4
3399·39	97·6	10		1·79			29408·0
3398·29		1					29417·6
3397·68		2					29422·8
3397·05		4					29428·3
3396·13		1					29436·3
3394·65		6					59449·1
3394·13		2					29453·6
3393·72		1					29457·2
3393·46		1					59459·4
3393·07		1					29462·8
3392·74	91·0	8		1·74			29465·7
3392·37		4					29468·9
3392·12		2					29471·1
3391·21		1					29479·0
3390·61		1					29484·2
3389·83		2					29491·0

†3406·566

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland —Ångström	Reduction to Vacuum		Oscillation Frequency in V. cuo
					λ+	$\frac{1}{\lambda}$ −	
3389·01		1					29498·1
3388·84		1					29499·6
3387·48		4					29511·5
3385·58		2					29528·0
3385·02		1					29532·9
3384·05		8					29541·4
3383·80		4					29543·6
3382·48		4					29555·1
3381·42		2					29564·4
3380·62		2					29571·4
3380·17		8					29575·3
3379·11		6					29584·6
3378·77		6					29587·6
3378·06		1					29593·8
3376·58		2					29606·8
3375·64		1					29615·0
3374·58		1					29624·3
3374·01		1				9·0	29629·3
3372·90		1				9·1	29639·0
3372·18		4					29645·3
3370·87		10					29656·8
3369·62		8					29667·8
3368·16		1			1·03		29680·7
3366·88		6			1·02		29692·0
3364·66		1					29711·6
3364·34		1					29714·4
3363·77		1					29719·4
3363·63		1					29720·7
3362·37		1					29731·8
3362·09		1					29734·3
3361·03		1					29743·7
3359·84		1					29754·2
3359·55		1					29756·8
3358·41		1					29766·9
3356·44		4					29784·4
3355·27		6					29794·8
3354·16		4					29804·6
3353·42		1					29811·2
3353·10		1					29814·0
3351·85		4					29825·2
3351·65		2					29826·9
3350·45		1					29837·6
3348·03		6					29859·2
3347·03		2					29868·1
3345·12		1					29885·2
3343·83		1					29896·7
3343·29		1					29901·6
3342·35		6					29910·0
3342·01		4					29913·0
3341·01		1					29922·0
3340·64		6					29925·3
3339·70		2					29933·7
3339·24		2				9·1	29937·8
3338·76		2				9·2	29942·0
3337·73		6					29951·3

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	1/λ −	
3336·30		2					29964·1
3335·85		4					29968·2
3334·31		2			1·02		29982·0
3331·74		4			1·01		30005·1
3330·37		1					30017·5
3329·64		2					30024·1
3329·00		8					30029·8
3327·60		1					30042·5
3325·56		4					30060·9
3324·62		4					30069·4
3323·84		6					30076·5
3322·65		2					30087·3
3320·86		2					30103·5
3320·36		1					30108·0
3319·35		4					30117·2
3317·24		4					30136·3
3316·60		1					30142·2
3315·75		1					30149·9
3314·86		8					30158·0
3314·60		1					30160·3
3314·25		1					30163·5
3313·98		1					30166·0
3312·82		1					30176·6
3312·40		1					30180·4
3311·23		1					30191·1
3310·53		6					30197·4
3308·89		1					30212·4
3307·87		1					30221·7
3307·33	04·7	6		2·63			30226·7
3307·16		1					30228·2
3306·50	04·1	10		2·40			30234·3
3306·09	03·7	10		2·39			30238·0
3305·28		1					30245·4
3304·45		1				9·2	30253·0
3303·69		1				9·3	30259·9
3302·87		1					30267·4
3302·02		1					30275·2
3301·35		1					30281·3
3300·69		1					30287·4
3299·61		1					30297·3
3299·14		1					30301·6
3298·77		1					30305·0
3298·25	96·0	8		2·25			30309·8
3296·91		1					30322·1
3296·56		1					30325·3
3295·94		1					30331·1
3295·12		1			1·01		30338·6
3293·17		1			1·00		30356·6
3292·70	90·8	8		1·90			30360·9
3292·13	90·0	8		2·13			30366·2
3291·10	89·3	6		1·80			30375·7
3290·86		1					30377·9
3290·03		1					30385·6
3289·51		1					30390·4
3289·04		1					30394·7

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
3288·77		1					30397·2
3288·14		1					30403·0
3287·09		2					30412·7
Q 3286·87	84·8	10		2·07			30414·8
3286·11	84·6	1		1·51			30421·8
3285·50		2					30427·5
3285·33		1					30429·0
3284·71	83·4	4		1·31			30436·2
3283·64		1					30444·7
3283·00	82·7	4		0·30			30450·6
3282·40		1					30456·2
3281·95		1					30460·4
3281·40		1					30465·5
3280·37		8					30475·1
3279·87		1					30479·7
3278·83		2					30489·4
3277·42		1					30502·5
3276·55		2					30510·6
3275·84		1					30517·2
3274·53		1					30529·4
3274·05	72·2	8		1·85			30533·9
3272·75		1					30546·0
3271·75		2					30555·4
3271·58		2					30557·0
3271·12	69·3	8		1·82		9·3	30561·3
3270·08		1				9·4	30570·9
3269·40		1					30577·2
3268·33		4					30587·3
3265·73	63·9	8		1·83			30611·6
3265·15		4					30617·1
3264·80		1n					30620·3
3264·60		4					30622·2
3263·46		2					30632·9
3263·05		1					30636·8
3262·40		2					30642·9
3262·10		1					30645·7
3261·41		2					30652·2
3260·32		2					30662·4
3260·09		4					30664·6
3259·15		1			1·00		30673·4
3258·50		1			0·99		30679·6
3257·69		6					30687·2
3257·33		2					30690·6
3256·80		1					30695·6
3256·20		1					30701·2
3255·97		1					30703·4
3254·79		1					30714·5
3254·47	52·4	8		2·07			30717·6
3254·03		1					30721·7
3253·70		2					30724·8
3253·00		2					30731·4
3252·55		2					30735·7
3251·31		6					30747·4
3250·75		2					30752·7
3250·50		1					30755·1

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3249·94		1					30760·4
3249·27		1					30766·7
3248 53		1					30773·8
3248·31	46·8	6		1·51			30775·8
3247·70	46·1	4		1·60			30781·6
3247·39		4					30784·6
3247·08		2					30787·5
3246·55		1					30792 5
3246 09		4					30796·9
3245·59		1					30801 6
3245·35		1					30803·9
3244·97		1					30807·5
3244·27	42·8	8		1·47			30814·2
3243·94		1					30817 3
3243·50		1					30821·5
3243·22		1					30824·2
3242·35		1					30832·4
3241·54		1					30840·1
3240·59		1					30849·2
3239·53	38·9	8		0·63			30859·3
	38·7						
3239 07	37·8	1		1·27			30863·7
3238·60		1					30868·1
3237·92		1					30874·6
3237·43		1					30879·3
3236·88		2				9·4	30884·5
3236·31	34·3	4		2·01		9·5	30889·9
3235·66		1					30896·1
3234·71		2					30905·2
3234·07	32·3	6		1·77			30911·3
3233·14		4					30920·2
3232·42		1					30927 1
3231·72		1					30933·8
3231·05		6					30940·2
3230·80		1					30942 6
3230·29		4					30947·5
3230·01		2					30950·1
3229·64		1					30953·7
3229·19		2					30958·0
3228·97		2					30960·1
3228·64		1					30963·3
3228·36		4					30966·0
3228·11		2			0·99		30968·4
3227·88	26·5	6		1·38	0 98		30970·6
3227·17		2					30977·4
3226·86		1					30980·4
3225·90	24·4	10		1·50			30989·6
3224·98		1					30998·4
3224·27		1					31005·3
3223·89		1					31008·9
3223·31		1					31014·5
3222·12	21·0	10		1·12			31026·0
3219·92	18·7	8		1·22			31047·2
3219·67		8					31049·6
3218·60		1					31059·9

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3217·49		8					31070·6
3216·03		8					31084·7
3215·49		1					31090·0
3214·48		2					31099·7
3214·14	12·2	8		1·94			31103 0
3213·43		1					31109·9
3212·08	10·8	6		1·28			31123·0
3211·77	10·5	2		1·27			31126·0
3211·63		2					31127·3
3210·92	09·8	4		1·12			31134·2
3210·35	09·3	4		1·05			31139·7
3209·45		4					31148·5
3208·60		4					31156·7
3207·22		2					31170·1
3205·45	04·3	8		1·15			31187·4
3204·15		1					31190·0
3203·14		1				9·5	31209·9
3202·65		2				9·6	31214·5
3201·52		1					31225·6
3200·81		1					31232·5
3200·58	99·7	8		0·88			31234·7
3199·62	98·8	8		0·82			31244·1
3198·38		1n					31256 2
3197·67		1n					31263·2
3197·04	96·3	8		0·74	0·98		31269·3
3196·24		2			0·97		31277·2
3195·35		1					31285·9
3194·73		1					31291·9
3194·52		1					31294·0
3193·92		1					31299·9
3193·37	92 7	6		0·67			31305·3
3192·93	92·3	6		0·63			31309·6
3192·66		1					31312·2
3191·77		6					31321·0
3191·22		1					31326·4
3190·80		1					31330·5
3190·13		1					31337·1
3188·96		4					31348·6
3188·67		4					31351·4
3188·14		2					31356·6
3187·70		1					31361·0
3187·35		2n					31364·4
3186·83		2					31369·5
3185·72		1					31380·5
3185·34		1					31384·2
3185·00		4					31387·6
3184·73		1					31390·2
3184·24		1					31395·1
3183·67		1					31400·7
3183·11		4					31406·2
3182·13		2					31415·9
3181·97		4					31417·5
3181·60		4					31421·1
3180·85		4					31428·5
R 3180·30	79·8	10		0·50			31434·0

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3179·61		2					31440·8
3179·06		1					31446·2
3178·64		1					31450·4
3178·08		6					31455·9
3177·64		1					31460·3
3177·09		1					31465·7
3176·44		2					31472·2
3176·09		1					31475·7
3175·53		8					31481·2
3175·18		1					31484·7
3173·75		4					31498·9
3173·53		1					31501·1
3172·14		2					31514·9
3171·73		1					31518·9
3171·44		6				9·6	31521 8
3170·43		2				9·7	31531·8
3168·94		4					31546·6
3168·15		1					31554·5
3167·97		4					31556·3
3166·55		6					31570·4
3165 97		6					31576·2
3165·11		4					31584·8
3164·40		1					31591·9
3163·95		2					31596·4
3162·45		2					31611·3
3162·04	60·9	6		1·14			31615·4
3161·44		2					31621·5
3160·74		8					31628·5
3160·37		4			0·97		31632·2
3159·20		1			0·96		31643·9
3159·08		2					31645·1
3158·48		1					31651·1
3157·99	57·4	6		0·59			31656 0
3157·15	56·7	8		0·45			31664·4
3156·35		4					31672·5
3155·89		1					31677·1
3155·37		2					31682·3
3154 61		2					31689·9
3154·29		1					31693 1
3153·85		1					31697·6
3153 31		6					31703·0
3151·95		1					31716·7
3151·42		8					31722·0
3150·35		2					31732·8
3149·64		1					31740·0
3148·47		2					31751·8
3148·31		1					31753·4
3147·84		2					31758·1
3147 70		2					31759·5
3147·40		2					31762·5
3146·52		1					31771·4
3145·13		2					31785·5
3144·61	44·4	4		0·21			31790·7
3144·06	44·2	6		–0·14			31796·3
3143·33		1					31803·7

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3142·97	43·3	4		−0·33			31807·3
3142·54	42·6	6		−0·06			31811·7
3140·47		4					31832·7
3140·00		4					31837·4
3139·76		1					31839·9
3138·62		2					31851·4
3137·84		1				9·7	31859·4
3136·89		1				9·8	31868·9
3136·59		4					31872·0
3135·76		1					31880·4
3135·51		2					31882·9
3134·21		8					31896·2
3132·61		6					31912·5
3129·45		4					31944·7
3129·20		2					31947·2
3129·05		2					31948·8
3126·89		1					31970·8
3126·25		6					31977·4
3125·77		8					31982·3
3125·00		1					31990·2
3124·16		1					31998·8
3123·43		1			0·96		32006·3
3122·41		2			0·95		32016·7
3121·83		1					32022·7
3120·95		4					32031·7
3120·54		4					32035·9
3120·41		1					32037·3
3119·58		6					32045·8
3117·69		2					32065·2
3116·73		8					32075·1
3116·47		1					32077·8
3115·86		1					32084·1
3113·70		2					32106·3
3112·16		4					32122·2
3111·90		2					32124·9
3111·81		2					32125·8
3110·97		2					32134·5
3110·37		4					32140·7
3109·73		1					32147·3
3109·07		1					32154·2
3108·07		2					32164·5
3107·46		1					32170·8
3106·50		1				9·8	32179·8
3105·69		1				9·9	32189·1
3104·34		1					32203·1
3103·95		1					32207·1
3102·96		4					32217·4
3102·76		6					32219·5
3102·23		1					32225·0
3101·96		1					32227·8
3101·63		4					32231·2
3101·10		1					32236·7
3100·97		2					32238·1
3100·77	99·8	8		0·97			32240·1
$s_2$3100·38	99·5	6		0·88			32244·2

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3100·04	99·2	10		0·84			32247·7
3099·11		1					32257·4
3098·25		6					32266·4
3097·70		1					32272·1
3097·00		1					32279·4
3096·12		1					32288·6
3095·37		2					32296·4
3095·03		1					32300·0
3093·92		6					32311·6
3093·45		2					32316·5
3092·87		1					32322·5
3091·67	90·4	8		1·27			32335·1
3091·25		1					32339·5
3090·31		1					32349·3
3089·64		1					32356·3
3088·93		1			0·95		32363·8
3088·25		1			0·94		32370·9
3087·49		1					32378·9
3086·85		1n					32385·6
3085·78		1n					32396·8
3083·81		10					32417·5
3083·22		1					32423·7
3082·75		1					32428·7
3082·27		1					32433·7
3081·97		1					32436·9
3081·26		1					32444·3
3081·09		1					32446·1
3080·11	79·3	4		0·81			32456·5
3079·81		1					32459·6
3078·50		4					32473·5
3078·10		4					32477·7
3077·77		2					32481·2
3077·32		1					32485·9
3076·60		1					32493·5
3075·80		10					32502·0
3074·53		2					32515·4
3074·24		2					32518·5
3074·08		2				9·9	32520·1
3073·28		1				10·0	32528·5
3072·28		1n					32539·1
3071·54		1n					32547·0
3070·33		1					32559·8
3069·56		1n					32568·0
3068·89		1					32575·1
3068·25		4					32581·9
3068·06		1					32583·9
3067·30	65·5	10		1·80			32594·8
3066·55		4					32599·9
3066·13		1					32604·4
3065·40		1					32612·2
3064·82		1					32618·3
3064·01		2					32627·0
3063·28		1					32634 7
3062·96		1					32638·2
3062·47		1					32643·4

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3062·29		1					32645·3
3061·89		1					32649·6
3061·08		4					32658·2
3060·63		2					32663·0
3059·19	57·3	10		1·89			32678·4
3057·55		10					32695·9
3056·39		2					32708·6
3055·82		1					32714·4
3055·35		6					32719·5
3054·45		2					32729·1
3053·95		1					32734·5
3053·53		2n					32739·0
3053·15		6					32743·1
3051·84		1					32757·1
3050·90		4					32767·2
3049·53		2n					32781·9
3048·61		2n			0·93		32791·7
s 3047·71	46·5	10		1·21			32801·5
3047·15		4n					32807·5
3047·02		1					32808·9
3045·70		2					32823·2
3045·16		6					32829·0
3044·68		2					32834·2
3043·36		1					32848·4
3042·75	41·5	8		1·25			32855·0
3042·13	40·7	6		1·43		10·0	32861·7
3041·83	40·3	8		1·53		10·1	32864·8
3041·08		1					32872·9
3040·54	39·2	8		1·34			32878·8
3040·07		1					32883·9
3039·44		2					32890·7
3039·19		1n					32893·4
3038·47		1					32901·2
3037·80		2					32908·5
3037·54	36·2	6		1·34			32911·3
3037·37		6					32913·1
3035·86		2n					32929·5
3034·63		2n					32942·8
3034·26		2					32946·9
3033·45		1					32955·7
3033·20		2					32958·4
3031·74		6					32974·3
3031·31	29·8	6		1·51			32978·9
3030·75		1					32985·0
3030·24	28·7	8		1·54			32990·6
3029·33		4					33000·5
3026·57	25·3	8		1·27			33030·6
3026·00		4					33036·8
3025·75	24·6	6		1·15			33039·6
3025·39		2					33043·5
3024·13	22·7	8		1·43			33057·3
3022·89		1					33070·8
T { 3021·15	19·9	8		1·25			33089·9
T { 3020·70	19·4	10		1·30			33094·8
3019·31		2					33110·0

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3019·08	17·7	8		1·38		10·1	33112·6
3018·23		1				10·2	33121·8
3017·72	16·5	8		1·22			33127·4
3016·29	15·0	6		1·29			33143·1
3016·04		4					33145·9
3015·01		1					33157·2
3014·27		2					33165·3
3012·59		2			0·93		33183·8
3012·07		1			0·92		33189·6
3011·57		6					33195·1
3010·28		1					33209·3
3009·66	08·4	10		1·26			33216·1
3009·18		4					33221·4
3008·23	07·3	10		0·93			33230·9
3007·30	06·3	10		1·00			33242·2
3005·40		4					33263·2
3004·73		1					33270·7
3004·20		2					33276·5
3003·74		1					33281·6
3003·14	02·7	6		0·44			33288·3
3002·74	02·4	4		0·34			33292·7
3002·58		1					33294·5
3002·18		1					33298·9
3001·80		1					33303·1
3001·05	00·2	8		0·85			33311·5
3000·56		6					33316·9
2999·61	99·0	10n		0·61			33327·5
2998·61		1					33338·6
2997·51		1					33350·8
2996·49		6				10·2	33362·2
2995·96		1				10·3	33368·0
2995·41		1					33374·1
t 2994·54	94·4	10		0·14			33383·8
2992·63		1					33405·1
2992·34		1					33408·4
2991·78		6n					33414·6
2990·48		6					33429·1
2989·43		1					33440·9
2989·00		1					33445·7
2988·58		2					33450·4
2987·82		1					33458·9
2987·40	87·1	8		0·30			33463·6
2986·72		1					33471·2
2986·54		2					33473·3
2985·65		6					33483·2
2984·92	84·1	8		0·82			33491·4
2983 68	82·0	10		1·68			33505·4
2982·94		1					33513·7
2982·78		1					33515·5
2982·31		1					33520·8
2981·95		6					33524·8
2981·54	79·7	8		1·84			33529·4
2980·62		6					33539·8
2979·98		1					33547·0
2979·44		1					33553·1

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Cornu	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$−	
2978·16		1					33567·5
2976·91		1					33581·6
2976·66		1					33584·4
2976·22	76·8	6		−0·58	0·92		33589·4
2974·86		1			0·91		33604·7
2973·41	73·8	8		−0·39		10·3	33621·1
2973·17		8				10·4	33623·7
2972·36		4					33632·9
2971·89		1					33638·2
2970·60		4					33652·8
2970·20	70·7	10		−0·5			33657·4
2969·52	70·0	10		−0·48			33665·1
2968·95		1					33671·5
2968·58		4					33675·7
2966·99	67·4	10		−0·41			33693·8
2966·31		2					33701·5
2965·92		4					33705·9
2965·35	65·6	8		−0·25			33712·4
2965·12		4					33715·0
2964·72		2					33719·6
2964·30		2					33724·4
2963·77		1n					33730·4
2962·67		1					33742·9
2962·20		2					33748·3
2961·74		1					33753·5
2961·30		4					33758·5
2960·75		2					33764·8
2960·64		1					33766·1
2960·39		4					33768·9
2960·07	60·5	8		−0·43			33772·6
2959·76		2					33776·1
2959·44		1					33779·8
2958·55		1					33789·9
2958·04		1n					33795·8
2957·57		6					33801·1
2957·48	57·4	6		0·08			33802·2
2957·38		6					33803·3
2956·94		2n					33808·3
2955·76		1					33821·8
2954·39		1n					33837·5
2954·13		6					33840·5
2953·99		4					33841·9
2953·86	53·8	6		0·06			33843·6
2953·59		6					33846·7
2952·65		1n					33857·5
2951·69		1n				10·4	33868·5
2950·34	50·5	8n		−0·16		10·5	33883·9
2949·83		1					33889·8
2949·28		6					33896·1
2949·07		1					33898·5
2948·79		2					33901·7
2948·52		6					33904·8
U 2948·00	47·8	8		0·20			33910·8
2947·77		8					33913·4
2947·45		4					33917·1

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland — Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2947·26		1					33919·3
2946·54		1					33927·6
2945·79		2n					33936·2
2945·20	44·6	4n		0·60			33943·0
2944·49	44·0	6		0·49			33951·2
2943·73	43·1	2		0·63			33960·0
2942·79		1					33970·8
2941·93		1					33980·8
2941·42	40·8	8		0·62			33986·7
2940·68	39 9	4n		0·78			33995·2
2939·39	38·7	4		0·69			34010·2
2939·15		2					34012·9
2937·90	37·3	8n		0·60			34027·4
2936·99	36·4	10		0·59			34038·0
2936·18		4					34047·4
2934·45		1					34067·4
2934·04		1			0·91		34072·2
2933·14	32·4	4		0·74	0·90		34082·6
2932·06		1					34095·2
2931·92	*31·1	1		0·82			34096·8
2931·55		2					34101·1
2931·18		1					34105·4
2930·72		1					34110·8
2930·49		1					34113·5
2929·67		4					34123·0
2929·20	28·3	8		0·90			34128·5
2929·04		2				10·5	34130·4
2928·83		4				10·6	34132·7
2928·20		2					34140·1
2928·02		1					34142·2
2927·66		4					34146·4
2927 08		1					34153·1
2926·65	26·0	8		0·65			34158·2
2925·96	25·2	6		0·76			34166·2
2925·43	24·7	6		0·73			34172·4
2924·66		1n					34181·4
2923·94	23·2	6		0·74			34189·8
2923·39	22·8	8n		0·59			34196·3
2922·81		1n					34203·0
2922·46	*21·5	2		0·96			34207·1
2921·86		1					34214·2
2921·19		1n					34222·0
2920·76	20·0	6		0·76			34227·1
2920·41		1					34231·2
2919·95		4					34236·6
2919·31		1					34244 1
2919·11		1					34246·4
2918·42		4					34254·5
2918·11	17·4	8		0·71			34258·2
2917·58		1					34264·4
2916·20		1n					34280·6
2914·34	13·6	6		0·74			34302·5
2913·70		1n					34310·0

* Those marked with an asterisk (*) were observed only in the Spark-spectrum.

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Angström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	1/λ –	
2912·26	11·5	10		0·76			34327·0
2911·01	*10·5	4		0·51			34341·7
2909·91		1					34354·7
2909·57	08·9	6		0·67			34358·7
2909·38		1					34361·0
2908·97	08·2	6		0·77			34365·8
2907·94		1					34378·0
2907·59	07·1	6		0·49		10·6	34382·1
2906·70		1				10·7	34392·6
2906·53	05 8	4		0·73			34394·6
2906·23		1					34398·1
2905·60		1					34405·6
2905·46		2					34407·3
2904·66		1					34416 7
2904·22	03·5	4n		0·72			34421·9
2903·52		1					34430·2
2902·55		1					34441·8
2902·02	01·3	8n		0 72			34448·0
2901·46	00·8	6		0·66			34454·7
2899·49	98·9	8		0·59			34478·1
2898·93		2					34484·8
2898·74		1					34487·0
2898·52	97·8	6n		0·72			34489·7
2897·69		1					34499·5
2897·33	*96·7	1		0·63			34503·8
2897·14		1					34506·1
2896·63		1					34512·2
2895·11	94·5	8		0·61			34530·3
2894·59	94·0	8		0·59			34536·5
2893·97	93·2	4		0·77			34543·9
2893·86		2					34545·2
2893·47		1					34549·9
2893·17		1					34553·5
2892·89		1					34556·8
2892·56	92·0	6		0·56	0·90		34560·7
2891·98	91·2	2		0·78	0·89		34567·7
2891·82		2					34569·6
2891·49		1					34573·5
2890·99		2					34579·3
2890·53		1n					34585 0
2890·12		2					34589·9
2889·96	89·2	4		0·76			34591·9
2889·66		1					34595·4
2888·01	*87·6	1		0·41			34615·2
2887·88	87·3	6		0·58			34616·8
2887·43		1					34622·2
2887·22		1					34624·7
2886·38	85·8	6		0·58			34634·8
2885·46		2					34645·8
2884·45		1n					34657·9
2883·80	83·3	6		0·50			34665·8
2882·99		1					34675·5
2881·65		10					34691·6
2880·84	80·4	6		0·44			34701·4
2880·67		2					34703·4

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	1/λ −	
2879·60		1					34716·3
2879·01		1					34723·5
2878·84	78·2	4		0·64			34725·5
2878·75		1					34726·6
2877·95		1					34736·2
2877·37	76·8	8		0·57		10·7	34743·3
2876 80	76·4	2		0·40		10·8	34750·0
2876·24		1n					34756·8
2875·78		1					34762·4
2875·35	74·9	2		0·45			34767·6
2874·98		4					34772·0
2874·24	73·6	8		0·64			34781·0
2873·74	73·0	2		0·74			34787·1
2873·48		2					34790·2
2872·93		1					34796·9
2872·54		1					34801·6
2872·38	72·0	8		0·38			34803·5
2871·83		1					34809·6
2871·39	*70·7	1		0·69			34815·5
2871·16		1					34818·3
2870·37		1					34827·9
2869·93		2					34833·3
2869·38	69·0	8		0·38			34839·9
2868·94		2					34845·3
2868·50	68·0	4		0·50			34850·6
2868·33		2n					34852·7
2867·94		1					34857·4
2867·63	67·1	4		0·53			34861·2
2867·37		4					34864·4
2867·09	*66·5	1		0·59			34867·8
2866·68	66·2	8		0·48			34872·8
2865·90		1					34882·3
2865·43	*64·7	1n		0·73			34888·0
2863·92	63·6	8		0·32			34906·4
2863·46	63·1	10		0·36			34912·0
2962·56	62·4	6		0·16			34923·0
2862·00		1					34929·8
2861·48	*60·9	1		0·58			34936·1
2861·29		1					34938·5
2860 50		4					34948·1
2859·48		1					34960·6
2858·96	58·3	6		0·66			34966·9
2858·41	*57·9	4		0·51			34973·7
2858·13		2					34977·1
2857·88		2					34980·2
2857·29	*56·7	1		0·59			34987·4
2857·09		1					34989·8
2856·19		1			0·89		35000·9
2855·75	*55·3	2		0·45	0 88		35006·3
2853·81		10					35030·1
2853·02		1					35039·8
2852·19		6					35050·0
2851·85		10					35054·1
2851·58		2					35057·5
2850·69		6					35068·4

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$−	
2849·91	*49·3	1		0·61			35078·0
2849·67		1					35081·0
2848·77	48·2	8		0·57			35092·1
2848·13	48·0	2		0·13		10·8	35100·0
2847·72		1n				10·9	35104·9
2846·87	46·5	6		0·37			35115·4
2845·75		2					35129·2
2845·63	45·3	8		0·33			35130·7
2844·04	43·6	10		0·44			35150·3
2843·69	43·1	8		0·59			35154·7
2843·30		2					35159·5
2842·96		2					35163·7
2842·46		1					35169·9
2842·06		1n					35174·8
2841·72		1n					35179·1
2841·32		1n					35184·0
2840·99		4					35188·1
2840·73		2					35191·3
2840·50	40·3	6		0·20			35194·2
2840·06	39·6	10		0·46			35199·6
2839·66		1					35204·6
2838·51		2n					35218·8
2838·19	37·7	8		0·49			35222·8
2836·45		1n					35244·4
2836·02		4					35249·8
2835·76		2					35253·0
2835·51	*35·2	6		0·31			35256·1
2834·81		4					35264·8
2834·48		1					35268·9
2834·22		1					35272·2
2834·07		1					35274·0
2833·95	32·8	1n		1·15			35275·5
2833·47	32·4	2		1·07			35281·5
2832·47	31·8	10		0·67			35294·0
2831·04		4					35311·8
2830·85		1					35314·2
2830·55		1n					35317·9
2829·58		1n					35330·0
2828·87	28·3	6		0·57			35338·9
2828·70		1					35341·0
2828·44		1n					35344·3
2827·98	27·3	4		0·68			35350·0
2827·68	*27·0	2n		0·68			35353·8
2827·20		1n					35359·8
2826·88		1n				10·9	35363·8
2826·56		4				11·0	35367·7
2826·07		2					35373·8
2825·75		6					35377·8
2825·60	25·1	8		0·50			35379·7
2824·73		2					35390·6
2824·42	23·9	6		0·52			35394·5
2823·32	22·9	8		0·42			35408·3
2821·95		1					35425·5
2821·69		1					35428·7
2821·33		1					35433·3

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
2821·09		1					35436·3
2820·86	20·4	2		0·46			35439·2
2820·35		1n			0·88		35445·6
2819·51		2			0·87		35456·1
2819 35	19·0	6		0·35			35458·2
2818·28		1					35471·6
2817·98		1					35475·4
2817 55	17·0	8		0·55			35480·8
2816·74		1n					35491·0
2815·58	15·1	6		0·48			35505·7
2815·14		2					35511·2
2813·67	*13·4	2		0 27			35529·8
2813·36	12 8	10		0·56			35533·7
2812·60	*12·2	1		0·40			35543·3
2812·36		1					35546·3
2812·09	11·7	4		0·39			35549·7
2811·23	*10·9	1n		0·33			35560·6
2810·94		1n					35564·3
2810 37	09·7	1n		0·67			35571·5
2808·73		1					35592·3
2808·37	07·9	6		0·47			35596·8
2808·03		1					35601·2
2807·32		2					35610·2
2807·03	06·7	10		0·33			35613·8
2806·53		1n					35620·2
2806·13		2				11 0	35625·3
2805·87	*05·4	2		0·47		11·1	35628·5
2804·92		4					35640·5
2804·56	04·2	10		0·36			35645·1
2804·13	*03·8	1n		0·33			35650·6
2803·68	03·2	6		0·48			35656·3
2803·20		2					35662·4
2802·76	01·8	4		0·96			35668·0
2801·15	00·8	8		0·35			35688·5
2800·73	00·1	1n		0·63			35693·9
2800·31	99 4	1		0·91			35699·2
2799·87		1					35704·8
2799·34		1					35711·6
2799·21	98·8	4		0·41			35713·3
2798·64		1					25720·5
2798·31	97·9	8		0·41			35724·7
2797·82	97·4	8		0·42			35731·0
2796·91	*96 3	2		0·61			35742·6
2796·38		1n					35749·4
2795 90		1					35755·6
2795·58		8					35759·7
2795·00	94·5	10		0·50			35767·1
2794·77		6					35770·0
2794·21		1					35777·2
2793·97	*93·3	2		0·67			35780·3
2792·89		1					35794·1
2792·44	92·2	6		0·24			35799·9
2791·84	91·5	6		0·34			35807·6
2791·51		6					35811·8
2791·00	*90·3	1		0·70			35818·3

Iron (Arc Spectrum)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2789·87	89·5	8		0·37		11·1	35832·9
2789·54		4				11·2	35837·0
2788·19	} 88·0	10		0·12			35854·4
2788·05		10					35856·2
2787·16		1					35867·6
2786·84		4					35871·7
2786·26		1					35879·2
2785·25		1					35892·2
2785·11		1					35894·0
2784·40	84·2	4		0·20			35903·2
2784·07		2			0·87		35907·4
2783·75	*83·4	8		0·35	0·86		35911·6
2782·12		1					35932·6
2781·89	81·6	8		0·29			35935·6
2780·93		1					35948·0
2780·77		4					35950·1
2780·61		1					35952·1
2780·28		4					35956·4
2779·85		4n					35962·0
2779·34	78·9	6		0·44			35968·6
2778·89	78·3	6		0·59			35974·4
2778·64		1					35977·6
2778·29	77·9	8		0·39			35981·2
2778·15	*77·7	6		0·45			35984·0
2776·86	*76·1	1		0·76			36000·7
2776·47		2n					36005·7
2775·92		1					36012·9
2775·11		1					36023·4
2774·76	74·5	8		0·26			36028·0
2774·47		1					36031·7
2774·21		1					36035·1
2773·96		2					36038·3
2773·28	73·1	8		0·18			36047·2
2772·89		2					36052·3
2772·56		4					36056·5
2772·40		2					36058·6
2772·15	71·9	8		0·25			36061·9
2771·94		1					36064·6
2771·30	71·1	1		0·20			36072·9
2770·75	70·3	4		0·45			36080·1
2770·57		1					36082·4
2770·06		1					36089·1
2769·73	69·4	4		0·33			36093·4
2769·37	69·1	6		0·27			36098·1
2768·98	68·8	4		0·18			36103·2
2768·52		2n					36109·2
2768·19		2n					36113·5
2767·56	67·2	10		0·36			36121·7
2766·99	66·8	6		0·19			36129·1
2766·75		2					36132·3
2766·45		1					36136·2
2766·07		1					36141·2
2765·73	*65·3	1		0·43			36145·6
2765·30	*64·7	1		0·60			36151·2
2765·13		1				11·2	36153·5

IRON (ARC SPECTRUM)—*continued*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2764·80		1				11·3	36157·7
2764·41	64·0	8		0·41			36162·8
2763·17	63·0	6		0·17			36179·0
2762·82	*62·4	6		0·42			36183·6
2762·52		1					36187·5
2762·12	61·9	8		0·22			36192·8
2761·83	61·7	8		0·13			36196·6
2761·57		1					36200·0
2761·30		1					36203·5
2760·96		6					36208·0
2760·71		1					36211·3
2760·42		1					36215·1
2760·20		1					36218·0
2759·86	59·7	8		0·16			36222·4
2759·42		1					36228·2
2759·02		1					36233·6
2758·20		1					36244·2
2757·91		6					36248·0
2757·38	57·2	8		0·18			36255·0
2757·09	*56·9	1		0·19			36258·8
2756·85		1					36262·0
2756·36	56·2	8		0·16			36268·4
2755·77	55·5	10		0·27			36276·2
2755·25		4					36283·0
2755·01		2					36286·2
2754·72		1					36290·0
2754·48	54·3	6		0·18			36293·2
2754·09	53·9	6		0·19			36298·3
2753·74	53·5	6		0·24			36302·9
2753·37	53·0	6		0·37			36307·8
2753·19		2					36310·2
2752·20		1					36323·3
2752·89		4					36327·4
2751·44	*50·8	2		0·64			36333·3
2751·20		1					36336·5
2750·95	50·6	8		0·35			36339·8
2750·82		1					36341·5
2750·21	49·8	10		0·41			36349·6
2749·58		6					36357·9
2749·42	49·0	6		0·42			36360·0
2749·23		6					36362·5
2748·49		1					36372·3
2748·25		1					36375·5
2747·64		6					36383·6
2747·03	46·6	10		0·43			36391·6
2746·54	46·1	10		0·44			36398·1
2745·87		2			0·86		36407·0
2745·52		1			0·85		36411·7
2745·13		6					36416·8
2744·60	44·2	8		0·40		11·3	36423·9
2744·12	43·7	8		0·42		11·4	36430·3
2743·63	43·3	6		0·33			36436·7
2743·23	42·8	10		0·43			36442·0
2742·45	42·0	10		0·45			36452·3
2742·11		4					36456·9

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda+$	$\frac{1}{\lambda}-$	
2741·65	*41·1	2		0·55			36463·0
2741·48		1					36465·2
2741·20		4					36469·0
2740·42		1n					36479·4
2739·59	39·1	10		0·49			36490·4
2738·92		1					36499·3
2738·55		2					36504·3
2738·28		4					36507·9
2737·93		4					36512·5
2737·72		2					36515·3
2737·37	36·9	8		0·47			36520·0
2737·02	36·5	8		0·52			36524·6
2736·61		1					36530·2
2736·31		1					36534·2
2735·71		6					36542·2
2735·61		6					36543·5
2735·51	35·0	6		0·51			36544·9
2734·98		2					36551·9
2734·70		2					36555·7
2734·39	33·9	8		0·49			36559·8
2734·07	33·7	4		0·37			36564·1
2733·65	33·1	10		0·55			36569·7
2732·88	*32·5	1		0·38			36580·0
2732·53		1					36584·7
2731·93	*31·5	1n		0·43			36592·8
2731·37		2					36600·3
2731·04		4					36604·7
2730·79	30·2	8		0·59			36608·0
2730·16		1					36616·5
2729·45	*29·1	1		0·35			36626·0
2729·02		1					36631·8
2728·90	28·3	6		0·60			36633·4
2728·45		1					36639·4
2728·11	27·5	6		0·61			36644·0
2727·61	27·1	8		0·51			36650·7
2727·48		1					36652·5
2726·90		1n					36660·3
2726·20	25·5	10		0·70			36669·7
2725·92		1					36673·5
2725·68		2					36676·7
2725·37		4					36680·9
2724·97	24·3	8		0·67			36686·2
2724·78		2					36688·8
2724·42		1					36693·7
2723·66	23·1	10		0·56			36703·9
2723·08		1				11·4	36711·7
2722·10		2				11·5	36724·8
2720·99	20·3	10		0·69			36739·8
2720·28	19·7	6		0·58			36749·4
2719·51		6					36759·8
2719·11	18·5	10		0·61			36765·2
2718·51	18·0	8		0·51			36773·4
2717·84	17·4	4		0·44			36782·4
2717·43		2					36788·0
2716·52		1					36800·3

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2716·31	15·7	4n		0·61			36803·1
2715·38	14·9	1n		0·48			36815·8
2715·24		1					36817·7
2714·93	14·4	4		0·53			36821·9
2714·48	13·8	10		0·68			36828·0
2714·15	13·5	4		0·65			36832·4
2713·64		1					36839·4
2712·42	*11·9	2		0·52			36855·9
2711·92	*11·5	2		0·42			36862·7
2711·71	11·2	6		0·51			36865·6
2711·02		1					36875·0
2710·61	10·1	6		0·51			36880·6
2710·08	09·7	2n		0·38			36887·8
2709·74		1					36892·4
2709·47		1					36896·1
2709·13	*08·7	2		0·43			36900·7
2708·64	08·1	10		0·54	0·84		36907·4
2708·00		1			0·83		36916·1
2707·57	06·7	2		0·87			36922·0
2707·13		1					36928·0
2706·63	06·0	8		0·63			36934·8
2706·07	05·6	6		0·47			36942·5
2705·61		1					36948·7
2705·30		1n					36953·0
2704·80		1n					36959·8
2704·06	*03·6	6		0·46			36969·9
2702·83	02·6	1n		0·23			36986·8
2702·52		4					36991·0
2701·99	01·2	4		0·79			36998·3
2701·08		1n				11·5	37010·7
2699·93		1n				11·6	37026·4
2699·18	98·6	8		0·58			37036·7
2698·68		1					37043·5
2698·23	97·7	1n		0·53			37049·7
2697·58	*97·0	1		0·58			37058·7
2697·08	96·6	8		0·48			37065·5
2696·41	95·9	8n		0·51			37074·7
2696·12	95·6	6n		0·52			37078·7
2695·64	95·0	4n		0·64			37085·3
2695·12	94·4	4		0·72			37092·5
2694·63	94·0	4n		0·63			37099·2
2694·37	*93·4	1		0·97			37102·8
2692·91		2					37122·9
2692·71	92·1	4		0·61			37125·7
2692·31	91·7	2		0·61			37131·2
2691·80	*91·2	1		0·60			37138·3
2691·46	90·9	1		0·56			37143·0
2690·80		1n					37152·1
2690·12	89·5	6		0·62			37161·5
2689·92	89·3	6		0·62			37164·2
2689·71		4n					37167·1
2689·28	88·8	8		0·48			37173·1
2687·91	87·3	2n		0·61			37192·0
2687·59	86·8	1n		0·79			37196·5
2686·82	86·0	2n		0·82			37207·1

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}-$	
2685·77		1n					37221·7
2685·19		1					37229·7
2684·86	84·2	4		0·66			37234·3
2684·10	83·5	4n		0·60			37244·8
2682·28	81·5	2n		0·78			37270·1
2681·62	80·8	4n		0·82			37279·3
2680·99	*80·4	1		0·59			37288·1
2680·53	79·9	6		0·63			37294·5
2680·26		2					37298·2
2679·97		1				11·6	37302·2
2679·14	78·5	10		0·64		11·7	37313·7
2678·25	77·2	1n		1·05			37326·1
2677·30		1					37339·4
2676·97	*76·1	2		0·87			37344·0
2676·56		1					37349·7
2676·21	75·1	1n		1·11			37354·6
2675·37	74·6	4n		0·77			37366·3
2674·74		2					37375·1
2674·32		1			0·84		37381·0
2673·28	72·4	6		0·88	0·83		37395·5
2672·30	71·8	1n		0·50			37409·2
2671·49	*70·8	1		0·69			37420·6
2670·86		1					37429·4
2670·59	69·9	1		0·69			37433·2
2670·00	*69·2	1		0·80			37441·5
2669·55	68·7	8		0·85			37447·8
2669·00	*68·5	1		0·50			37455·5
2668·84		1n					37457·8
2668·30		1					37465·3
2667·97	67·2	6		0·77			37470·0
2667·72		1					37473·5
2667·36		1					37478·5
2667·05		6					37482·9
2666·94	66·1	8		0·84			37484·4
2666·72		4					37487·5
2666·43	65·7	8		0·73			37491·6
2665·87	64·2	1		0·67			37499·5
2665·15	64·0	1		1·15			37509·6
2664·74	63·5	8		1·24			37515·4
2664·16		4n					37523·6
2663·28	*62·2	1n		1·08			37536·0
2662·42		2					37548·1
2662·13	61·6	8		0·53			37552·2
2661·57		1					37560·1
2661·31	60·8	8		0·51			37563·8
2660·48		6					37575·5
2659·26		1n					37592·7
2658·48	57·8	2		0·68		11·7	37603·8
2656·85	56·4	6		0·45		11·8	37626·7
2656·22	55·7	8		0·52			37635·7
2655·17	*54·4	1		0·77			37650·6
2653·40		2					37661·5
2653·87	*53·3	1		0·57			37669·0
2652·53	*52·2	1		0·33			37688·1
2651·78	50·9	6		0·88			37698·7

Iron (Arc Spectrum)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	1/λ –	
2651·27	50·4	4		0·87			37706·0
2648·57		4					37744·4
2648·29		1					37748·4
2647·64	47·3	8		0·34			37757·7
2646·40	45·2	1		1·20			37775·4
2645·52	44·9	6		0·62			37787·9
2644·07	43·8	10		0·27			37808·7
2641·74	41·4	8		0·34			37842·0
2641·13	*40·7	2		0·43			37850·8
2640·35		1					37862·0
2639·60	*39·2	1		0·40		11·8	37872·7
2637·69	36·6	1		1·09	0·83	11·9	37900·1
2636·54	36·1	4		0 44	0·82		37916·6
2635·87	35·5	8		0·37			37926·2
2635·00		1n					37938·8
2633·68	*32·9	1		0·78			37957·8
2633·09		1					37966·3
2632·66	32·3	2		0·36			27972·5
2632·30	32·0	4		0·30			37977·7
2631·72		2					37986·1
2631·37	31·0	10		0·37			37991·1
2631·07	30·7	10		0·37			37995·4
2630·13	29·7	2		0·43			38009·0
2629·66	29·2	1		0·46			38015·8
2629·28		1					38021·3
2628·35	27·9	10		0·45			38034·8
2627·18	26·8	2		0·38			38051·7
2626·52	26·2	1		0·32			38061·3
2625·72	25·2	10		0·52			38072·9
2624·84		1					38085·7
2624·21	23·6	2		0·61			38094·8
2623·58	23·1	10		0·48			38104·0
2622·00		1					38126·9
2621·72	21·2	8		0·52			38131·0
2620·73	*20·4	1		0·33			38145·4
2620·47	19·9	6		0·57		11·9	38149·2
2619·06	*18·6	1		0·46		12·0	38169·6
2618·78	18·3	4		0·48			38173·7
2618·47		1					38178·2
2618·10	17·6	4		0·50			38183·6
2617·71	17·2	6		0·51			38189·3
2617·25		2					38196·0
2616·50		1					38207·0
2615·94		1					38215·2
2615·50	15·0	6		0·50			38221·6
2614·62	14·0	4		0·62			38234·5
2614·27		1					38239·6
2613·91	13·3	8		0·61			38244·9
2613·33		2					38253·4
2612·96	12·3	4		0·66			38258·8
2611·94	11·4	10		0·54			38273·7
2611·16	10·7	2		0·46			38285·1
2610·87	10·3	1		0·57			38289·4
2609·79	09·1	1n		0·69			38305·3
2609 30	08·7	1		0·60			38312·5

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2608·65	08·2	4n		0·45			38322·0
2607·16	06·7	8		0·46			38343·9
2606·92	06·5	4		0·42			38347·4
2606·36	*06·1	2		0·26			38355·7
2605·77	05·3	8		0·47			38364·4
2604·90	04·4	6		0·50			38377·2
2603·71	03·5	4		0·21		12·0	38394·7
2600·25	99·7	4		0·55	0·82	12·1	38445·7
2599·53	98·9	10		0·63	0·81		38456·4
2598·95		1					38465·0
2598·44	97·8	10		0·64			38472·5
2596·60	96·0	2n		0·60			38499·8
2595·41	95·2	1		0·21			38517·5
2594·20	93 5	6		0·70			38535·4
2593·75	93·1	6		0·65			38542·1
2592·90	*92·2	4		0·70			38554·8
2592·35	91·7	2		0·65			38562·9
2591·65	91·0	8		0·65			38573·4
2591·34		4					38578·0
2590·65	*90 0	1		0·65			38588·3
2588·96	*88·2	1		0·76			38613·4
2588·11	87·5	10		0·61			38626·1
2586·56		1					38649·3
2585·93	85·4	10		0·53			38658·7
2584·59	84·0	8		0·59			38678·8
2582·50	82·0	10		0·50		12·1	38710·1
	81·7					12·2	
2581·57	80·9	2		0·67			38723·9
2581·05	80·3	1		0·75			38731·7
2580·52	79·9	2		0·62			38739·7
2579·92	79·5	6		0·42			38748·7
	79·3						
2579·35	78·7	4		0·65			38757·3
2578·86	78·3	1		0·56			38764·6
2578·01	77·4	10		0·61			38777·4
2577·41	*76·5	1		0·91			38786·4
2576·76	76·2	8		0·56			38796·2
2576·20	75·7	6		0·50			38804·7
2575·83	75·3	10		0·53			38810·2
	74·8						
2574·43	74·0	6		0·43			38831·3
2573·84		1					38840·3
2573·23	*72·8	1		0·43			38849·5
2572·82	72·5	6		0·32			38855·7
2571·67	*71·2	4		0·47			38873·0
2570·92	*70·6	1		0·32			38884·4
2570·56	70·1	8		0·46			38889·8
2569·73	69·4	6		0·33			38902·4
2568·97	68·6	4		0·37			38913·9
2568·49	*68·1	2		0·39			38921·2
2567·93		4					38929·7
2566·99	66 7	8		0·29			38933·9
2565·55	65·1	2		0·45			38965·8
2564·63	64·2	4		0·43	0·81		38979·8
2563 99		1			0·80		38989·5

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda+$	$\frac{1}{\lambda}-$	
2563·53	63·2	10		0·33		12·2	38996·5
2562·63	62·3	10		0·33		12·3	39010·1
2562·35	61·9	4		0·45			39014·4
2561·87	61·5	4		0·37			39021·7
2561·33	60·9	4		0·43			39029·9
2560·65	60·3	6		0·35			39040·3
2560·43	60·0	4		0·43			39043·6
2559·91	*59·6	2		0·31			39051·6
2559·25	*58·9	1		0·35			39061·6
2558·60	58·3	4		0·30			39071·6
2557·42	*57·2	1		0·22			39090·4
2556·92	56·6	6		0·32			39097·2
2556·38	56·0	6		0·38			39105·5
2555·59	*55·2	4		0·39			39117·6
2555·37	54·9	4		0·47			39121·0
2555·04	*54·8	4		0·24			39126·0
2554·00	*53·4	1		0·60			39142·0
2553·32	52·8	8		0·52			39152·4
2552·74	52·3	4		0·44			39161·3
2551·19	50·8	8		0·39			39185·1
2550·75	50·3	2n		0·45			39191·8
2550·07	49·7	2n		0·37			39202·3
2549·63	49·2	8		0·43			39209·1
2548·76	*48·4	6		0·36			39222·5
2548·17	47·8	2		0·37			39231·5
2547·06	46·6	8		0·46			39248·6
2546·26	45·8	8		0·46			39261·0
2545·95	*44·9	2		1·05		12·3	39265·8
2544·83	44·5	8n		0·33		12·4	39283·0
2544·02	43·7	6		0·32			39295·5
2543·47	43·0	4		0·47			39304·0
2542·85	*42·4	1		0·45			39313·5
2542·20	41·7	8		0·50			39323·6
2541·18	40·8	6		0·38			39339·4
2540·90	*40·4	4		0·50			39343·7
2540·00		1					39357·7
2539·48	39·1	2		0·38			39365·7
2538·98	38·6	10		0·38			39373·5
2537·21	36·9	10		0·31			39401·0
2536·90	36·6	8		0·30			39405·8
2535·67	35·2	6		0·47			39424·9
2535·25		4					39431·4
2534·52	34·2	4		0·32			39442·8
2533·86	33·4	10		0·46			39453·1
2533·26	32·6	2		0·66			39462·4
2532·98	32·4	1		0·58			39466·8
2532·37	32·0	6		0·37			39476·3
2531·62	31·1	1		0·52			39488·0
2530·79	30·4	8		0·37			39500·9
2530·03	29·6	4		0·43			39512·8
2529·65	*29·2	4		0·45			39518·8
2529·40	28·9	8n		0·50			39522·7
2529·03		4					39528·4
2528·57	28·1	6		0·47			39535·6
	27·9						

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
2527·67	27·1	8		0·57			39549·7
2527·30	*26·7	8		0·60	0·80	12·4	39555·5
2526·30	26·0	8		0·30	0·79	12·5	39571·1
2525·48	25·1	6		0·38			39583·9
2525·11	24·7	6		0·41			39589·7
2524·52	23·9	2		0·62			39599·0
2524·32		6					39602·1
2523·76	23·3	6		0·46			39610·9
2523·19		8					39619·9
2522·93		1					39623·9
2522·67	22·5	6		0·17			39628·0
2521·97	21·5	6		0·47			39639·0
2521·09	20·8	6		0·29			39652·9
2519·71	19·3	4		0·41			39674·6
2519·30	18·8	4		0·50			39681·1
2518·93	18·5	2		0·43			39686·9
2518·25	17·8	10		0·45			39697·6
2517·76	17·4	6		0·36			39705·3
2517·25	16·8	6		0·45			39713·4
2516·65	16·3	2		0·35			39722·9
2516·19	15·8	8		0·39			39730·1
2514·84	14·3	2		0·54			39751·5
2514·38	14·1	6		0·28			39758·7
2513·94		2					39765·7
2513·33	13·2	2n		0·13			39775·4
2512·38	12·2	6		0·18			39790·4
	12·0						
2511·84	11·6	4		0·24			39799·0
2511·41	11·4	2		0·01			39805·8
2511·05 }	10·6	8		0·36			{ 39811·5
2510·87 }							{ 39814·3
2509·43	*08·8	1n		0·63		12·5	39837·2
2508·78	08·5	6		0·28		12·6	39847·4
2507·99	07·6	6		0·39			39860·0
2507·49		2					39867·9
2506·98	06·6	6		0·38			39876·0
2506·70	06·2	4		0·50			39880·5
2506·25	*05·8	2		0·45			39887·6
2505·64	05·2	8		0·44			39897·4
2505·09	04·9	4		0·19			39906·1
2503·89	*03·6	2		0·29			39925·3
2503·50	03·0	8		0·50			39931·5
2502·53	02·1	8		0·43			39947·0
2501·87	01·4	8		0·47			39957·5
2501·00	00·9	8		0·10			39971·4
2498·96	98·7	10		0·26			40004·0
2498·37		2					40013·5
2497·88	97·5	6		0·38			40021·3
2497·15		6					40033·0
2496·60	96·3	6		0·30			40041·9
2496·01	95·6	8		0·41			40051·3
2495·35		1					40061·9
2494·30	93·9	1		0·40			40078·8
2494·10	93·7	4		0·40			40082·0
2493·34	92·9	10		0·44			40094·2

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland −Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$−	
2492·72		1					40104·2
2492·12	92·0	4		0·12			40113·9
2491·50	91·0	6		0·50			40123·9
2490·98	90·5	6		0·48		12·6	40132·2
2490 50		4			0·70	12·7	40139·9
2490·01	89·5	4		0·51	0·78		40147·8
2489·63	*89·2	4		0·43			40153·9
2489·04	88·7	6		0·34			40163·4
2488·23	87·7	10		0·53			40176·5
2487·44	87·1	1		0·34			40189·3
2487·18	86·8	2		0·38			40193·5
2486·77	86·4	2		0·37			40200·1
2486·42	86·1	2		0·32			40205·8
2486·04	85·7	2		0·34			40211·9
2485·47		1					40221·1
2485·21	84·7	1		0·51			40225·3
2484·35	83·7	8		0·65			40239·3
2483·34	82 9	10		0·44			40255·6
2482·16	81·8	4		0·36			40274·8
2481·11	*80·7	1		0·41			40291·8
2480·25	80·0	6		0·25			40305 8
2480·01		6					40309·7
2479·64	79·5	10		0·14			40315·7
	79·2						
2478·67	78·3	2		0·37			40331·5
2478·22	*77·9	1		0·32			40338·8
2477·41	*77·1	1		0·31			40352·0
2476·77	76·5	8		0·27			40362·5
2476·40	75·8	1		0·60			40368·5
2474·88	74·5	8		0·38			40393·3
2473·30	*72·9	1		0·40			40419·1
2473·15	72·7	6		0·45		12·7	40421·6
2472·83	72·4	6		0·43		12·8	40426·7
2472·40	71·9	6		0·50			40433·7
2471·05	70·5	4		0·55			40455·8
2470·78	*70·3	4		0·48			40460·2
2470·01		1					40472·9
2469·60	*69·0	1		0·60			40479·6
2468·97	68·4	8		0·57			40489·9
2468·41	*67·8	1		0·61			40499·1
2467·80	67·2	6n		0·60			40509·1
2466·81	66·4	6n		0·41			40525·4
2466·02	*65·4	2		0·62			40538·4
2465·23	64·7	8		0·53			40551·4
2465·05	*64·5	1		0·55			40554 3
2464·09	*63·7	1		0·39			40570·1
2463·86	63·4	4		0·46			40573·9
2463·39	62·8	2		0·59			40581·7
2462 81	62·3	6		0·51			40591·2
2462·60		4					40594·7
2462·30	61·9	4		0·40			40599·6
2461·89	*61·4	4		0·49			40606·4
2461·28	61·0	8		0·28			40616·5
	60·8						
2460·37	60 2	6		0·17			40631·5

IRON (ARC SPECTRUM)—*continued.*

Kayser and Rowland Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
2459·53		1					40645·4
2458·78	58·5	8		0·28			40657·8
	58·2						
2457·68	57·4	8		0·28			40676·0
2456·67	*56·4	2n		0·27			40692·7
2456·14	56·0	2		0·14		12·8	40701·5
2455·66	55·3	4n		0·36		12·9	40709·3
2454·55	*54·3	2n		0·25	0·78		40727·8
2453·57	53·2	8		0·37	0·77		40744·0
2452·67	52·3	2n		0·37			40759·0
2452·29	51·8	1		0·49			40765·3
2451·80	51·3	2		0·50			40773·5
2451·55	51·0	2		0·55			40777·6
2451·28	50·7	2		0·58			40782·1
2450·56	50·0	2		0·56			40794·1
2449·93	*49·6	1		0·33			40804·6
2448·88	48·5	1n		0·38			40822·1
2448·50	48·1	2		0·40			40828·4
2447·81	47·5	8		0·31			40839·9
2447·25	*47·1	1		0·15			40849·3
2446·53	46·3	2		0·23			40861·3
2446·30	*45·9	1		0·40			40865·2
2445·68	45·4	4		0·28			40875·5
2445·23	44·9	2		0·33			40883·0
2444·58	44·3	6		0·28			40893·9
2443·94	43·7	6		0·24			40904·6
2442·68	42·3	10		0·38			40925·7
2441·73	41·5	2		0·23			40941·7
2440·25	39·8	8		0·45			40966·5
2439·82	39·4	8		0·42			40973·7
2439·36	*39·0	6		0·36		12·9	40981·5
2438·27	37·9	6		0·37		13·0	40999·7
2437·33	*36·9	1n		0·43			41015·5
2436·45	36·0	8		0·45			41030·3
2435·93	35·6	4		0·33			41039·1
2435·04	34·7	6		0·34			41054·1
2434·86	34·3	4		0·56			41057·1
	33·9						
2433·54	*33·2	1		0·34			41079·4
2432·97	*32·5	2		0·47			41089·0
2432·34	31·8	4		0·54			41099·7
2431·38	30·7	4		0·68			41115·9
2431·08	30·5	8		0·58			41121·0
2430·16	29·7	6		0·46			41136·5
2429·53	29·0	8		0·53		13·0	41147·2
2429·00	28·5	1		0·50		13·1	41156·1
2428·41	*27·9	4		0·51			41166·1
2427·11	*27·0	1		0·11			41188·2
2426·46	25·4	1n		0·06			41199·2
2425·68	25·0	1n		0·68			41212·5
2425·04	*24·3	1		0·74			41223·3
2424·22	23·8	8		0·42			41237·3
2423·25	22·9	2		0·35			41253·8
2422·73	22·4	1		0·33			41262·6
2421·79	21·3	8		0·49			41278·7

Iron (Arc Spectrum)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
2421·02	20·7	1		0·32			41291·8
2420·39	20·0	1		0·39			41302·6
2419·80	19·4	1		0·40			41312·6
2419·49	18·9	4n		0·59			41317·9
2419·17	18·2	4		0·97			41323·4
2417·94	17·5	4n		0·44			41344·4
2417·58	17·1	2		0·48	0·77		41350·6
2416·68	16·3	1		0·38	0·76		41366·0
2416·00	15·4	2n		0·60			41377·6
2415·29	14·8	1		0·49		13·1	41389·8
2414·50	13·8	1		0·70		13·2	41403·2
2413·37	13·0	10		0·37			41422·6
2412·45		1					41438·3
2411·79	11·4	1n		0·39			41449·8
2411·16	10·7	10		0·46			41460·6
2410·56	10·2	10		0·36			41470·9
2408·13	07·6	2		0·53			41512·8
2407·66	07·3	2n		0·36			41520·9
	06·9						
2406·72	06·3	10		0·42			41537·1
2405·02	04·5	10		0·52			41566·5
2404·48	04·2	8		0·28			41575·8
2402·67	02·3	4		0·37			41607·2
2402·23	01·9	1		0·33			41614·8
2401·60	01·4	2		0·20			41625·7
2401·25	01·0	1		0·25			41631·8
2400·39	00·0	2		0·39			41646·7
2399·31	99·0	10		0·31			41665·4
2398·29	98·0	1		0·29			41683·2
2395·62	95·4	10		0·22		13·2	41729·6
	95·2						
2394·33	94·1	1		0·23		13·3	41752·0
	92·8						
2392·70	92·4	1		0·30			41780·5
2391·53	91·3	6		0·23			41800·9
2390·03	89·9	4		0·13			41822·4
2388·71	88·4	8		0·31			41850·3
2388·42	*88·0	1n		0 42			41855·4
	87·2						
2386·03	85·8	1		0·23			41897·3
2385·07	84·8	4		0 27			41914·2
2384·48	84·2	6		0·28			41924·6
2383·24	83·0	8		0·24			41946·4
	82·7						
2382·15	81·7	10		0·45			41965·6
2380·82	80·5	6		0·32	0·76		41989·0
2379·38	79·0	8		0·38	0·75	13·3	42014·5
2378·03	77·6	2		0·43		13·4	42038·2
2377·33	76·9	2		0·43			42050·6
2376·54	76·2	1		0·34			42064·6
2375·90		1					42075·9
2375·30	74·9	8		0·40			42086·5
2374·59	74·1	2		0·49			42099·1
2373·79	73·4	10		0·39			42113·3
2372·65	72·7	1		0·05			42133·6

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
2371·51	71·1	4		0·41			42153·8
2370·56	70·1	6		0·46			42170·7
2369·55	69·1	2		0·45			42188·7
2368·66	68·2	8		0·46			42204·6
2366 66	66·2	6		0·46			42240·2
2365 61	65·1	1		0·51			42259·0
2364·88	64·4	10		0·48			42272·0
2363·81	63·5	1		0·31		13·4	42291·2
2362·11	*61·6	8		0·51		13·5	42321·5
	60·3						
2360·37	59·9	8		0·47			42352·7
2360·06	59·7	8		0·36			42358·3
	59·2						
2359 16	58·7	6		0·46			42374·5
	55·6						
2355·37	55·1	1		0·27			42442·7
2354·93	53·6	6		0·23			42450·6
	54·1						
	51·5						
2351·22	50·9	2		0·32			42517·6
2350·50	49·9	1		0 60			42530·6
2349·91	49·5	4		0·41		13·5	42541·3
2348·28	48·0	10		0·28		13·6	42570·8
	47·8						
	45·9						
2345·29	44·7	2		0·59			42625·0
2344·37	43·9	6		0·47			32641·8
2344·09	43·6	6		0·49	0·75		42646·9
2343·52	43·1	6		0·42	0·74		42657·3
2341·69	41·2	1n		0·49			42690·6
2340·30	40·0	2n		0·30			42716·0
2339·62	39·3	2n		0·32			42728·4
	39·0						
2338·08	37·7	8		0·38			42756·5
	34·8						
2334·83	34·5	4		0·33		13·6	42816·1
	34·2						
	33·1					13·7	
2332·87	32·5	10		0·37			42852·0
2331·38	30·9	8		0·48			42879·3
2329·67	29·3	1n		0·37			42910·8
2327·40	26·9	8		0·50			42952·7
2321·48		1					43062·3
2320·42	19·9	6		0·52			43081·9
	19·6						
	19·2					13·7	
2318·23	17·7	4		0·53		13·8	43122·6
	17·5						
2317·32	16·7	4		0·62			43139·5
2314·10	13·6	1		0·50			43199·5
2313·17	12·7	6		0 47			43216·9
2312·40	12·0	1		0·40			43231·3
	11·6						
	11·0						
	10·6						

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland – Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
	09·3						
2309·05	08·6	6		0·45	0·74		43294·0
2306·35	06·0	4		0·35	0·73		43344·7
	05·8						
2304·82	04·4	2		0·42		13·8	43373·5
	03·4					13·9	
2303·52	03·2	6		0·32			43397·9
2301·75	01·4	4		0·35			43431·3
	01·0						
2300·70	00·4	1		0·30			43451·1
2300·20	00·0	2		0·20			43460·6
	99·2						
2299·30	99·0	4		0·30			43477·6
	98·6						
2298·24	98·0	6		·24			43497·7
2297·85	97·6	6		0·25			43505·0
2297·04	96·8	4		0·24			43520·4
2296·23		1					43535·7
2294·45	94·2	2		0·25			43569·5
2293·90	93·6	6		0·30			43580·0
2292·56	92·3	2		0·26			43605·5
	91·4						
2291·18	90·9	6		0·28			43631·7
	90·6						
2290·61	90·3	4		0·31			43642·6
2290·05	89·9	1		0·15			43653·3
2289·05	88·8	8		0·25			43672·3
2288·19	87·9	2		0·29			43688·8
2287·70	87·4			0·30		13·9	43698·1
2287·37	87·1			0·27			43704·3
2284·12	84·0			0·12		14·0	43766·5
	83·6						
	83·2						
2283·15	83·0	n		0·15			43785·1
	82·8						
2282·17	81·8			0·37			43803·9
	80·0						
2280·05	79·7			0·35			43844·7
2277·73	77·5			0·23			43889·4
2277·12	76·9			0·22			43901·1
2276·07	75·7	n		0·37			43921·4
	75·2						
	74·9						
2274·09	73·8			0·29			43959·6
2272·83	72·5			0·33			43984·0
	71·8						
2271·84	71·5			0·34		14·0	44003·2
2270·87	70·5			0·37	0·73	14·1	44021·9
2270·47					0·72		44029·6
2268·96	68·8			0·16			44059·0
2267·51	67·2			0·31			44087·1
2267·06	66·8			0·26			44095·9
	66·6						
2266·37	65·7			0·67			44109·3
2265·05	64·7			0·35			44135·0
2264·51	64·2			0·31			44145·6

IRON (ARC SPECTRUM)—*continued.*

Kayser and Runge (Rowland)	Liveing and Dewar	Intensity and Character	Müller and Kempf	Difference Rowland − Ångström	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
2263·37	63·2			0·17			44167·8
	62·8						
	62·4						
	60·7						
2260·83	60·4			0·43			44217·4
2260·15	59·8			0·35			44230·7
2259·50	59·2			0·30			44243·5
2255·94	55·4			0·54		14·1	14313·3
2253·15	52·8			0·35			44368·1
	51·6					14·2	
	51·2						
	50·6						
2250·82	50·5			0·32			44414·0
2248·97	48·8			0·17	0·72		44450·6
2230·01	29·7			0·31	0·71		44828·6
	&c.			&c.			

THE TELLURIC LINES OF THE SOLAR SPECTRUM.[1]

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström[2]
6020·33	10?	9	16610·4	4·9	16605·5	
6019·25	7	2	16613·4		16608·5	
6016·56	6?	—	16620·8		16613·9	
6016·06	8	2	16622·2		16617·3	
6015·88	9	3	16622·7		16617·8	
6015·48	8?	1	16622·8		16618·9	
6015·22	6	1	16624·5		16619·6	
6014·64	4	2	16626·1		16621·2	
6014·03	4	1	16627·8		16621·9	
6012·93	6	2	16630·8		16625·9	
6012·17	5	—	16632·9		16628·0	
6011·83	5	—	16633·9		16629·0	
6011·58	5	2	16634·5		16629·6	
6011·18	5	2	16635·7		16630·8	
6010·09	4	2	16638·7		16633·8	
6009·53	9	2	16640·2		16635·3	
6009·43	5	1	16640·5		16635·6	
6008·50	5?	—	16643·1		16638·2	
6007·20	5	1	16646·7		16641·8	
6006·81	4?	2	16647·8		16642·9	
6006·08	5	1	16649·8		16644·9	
6005·03	5	1	16652·7		16647·8	
6004·82	8	2	16653·3		16648·4	
6004·33	4	—	16654·6		16649·7	
6003·96	8	2	16655·7		16650·8	
6002·78	8	3	16659·0		16654·1	

[1] Becker, *Trans. Roy. Soc. Edin.* xxxvi. I. 1890.

[2] For convenience of comparison the numbers determined by Cornu, Piazzi-Smyth, and Fievez are given in the column headed 'Ångström.' For the purpose of identification Becker's map has been carefully compared with Rowland's photograph and with Fievez's map.

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
6002·22	7	2	16660·5	4·9	16655·6	
6001·68	6	1	16662·0		16657·1	
6001·39	5	2	16662·8		16657·9	
6000·34	7	2	16665·7		16660·8	
5999·83	11	4	16667·1		16662·2	
5998·73	3?	2	16670·2		16665·3	
5998·37	6d	2	16671·2		16666·3	
5997·43	10	4	16673·8		16668·9	
5996·67	5	—	16675·9		16671·0	
5996·53	5	—	16676·3		16671·4	
5995·39	5	1	16679·5		16674·6	
5994·74	11	4	16681·3		16676·4	
5994·08	6	2	16683·1		16678·2	
5993·81	5	2	16683·9		16679·0	
5993·27 } 5993·17 }	8d	3	16685·5		16680·6	
5992·17 }	11d	{ 4	16688·4		16683·5	
5992·01 }		{ 4	16688·9		16684·0	
5991·03	11	4	16691·6		16686·7	
5990·74	10	3	16692·4		16687·5	
5990·50	6	1	16693·1		16638·2	
5989·44	11	4	16696·1		16691·2	
5989·06	4	1	16697·1		16692·2	
5988·75 } 5988·67 }	10d	4	16698·1		16693·2	
5988·27	8	2	16699·3		16694·4	
5987·20	11?	8	16702·3		16697·4	
5986·25	4	2	16705·0		16700·1	
5985·86	5	2	16706·0		16701·1	
5985·37	10	4	16707·4		16702·5	
5985·00	8	—	16708·4		16703·5	
5984·41	7	3	16710·1		16705·2	
5984·24	6	2	16710·6		16705·7	
5983·55	7	2	16712·5		16707·6	
5983·00	6	2	16714·0		16709·1	
5982·47	5	2	16715·5		16710·6	
5982·15	8	2	16716·4		16711·5	
5981·89	7	2	16717·1		16712·2	
5981·40	9	3	16718·5		16713·6	
5980·96	4	1	16719·7		16714·8	
5980·70	6	1	16720·4		16715·5	
5980·31	8	3	16721·5		16716·6	
5979·93	4?	—	16722·6		16717·7	
5979·33	5	—	16724·3		16719·4	
5979·08	6	2	16725·0		16720·1	
5978·18	6	1	16727·5		16722·0	
5977·94	12	4	16728·2		16723·3	
5977·55	8	3	16729·3		16724·4	
5977·14	12	5	16730·4		16725·5	
5976·94	10?	7	16731·0		16726·1	
5976·66	8	3	16731·8		16726·9	
5976·04	7	2	16733·5		16728·6	
5975·27	12	5	16735·6		16730·7	
5974·40	8	3	16738·1		16732·2	
5973·72	4	2	16740·0		16735·1	
5972·95	6	1	16742·1		16737·2	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity: Horizon	Intensity: Medium Altitude	Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo: Rowland	Oscillation Frequency in Vacuo: Ångström
5972·77	3?	—	16742·6	4·9	16737·7	
5972·71	5	2	16742·8		16737·9	
5971·53	11	5	16746·1		16741·2	
5970·87	5	2	16748·0		16743·1	
5970·70		2	16748·5		16743·6	
5970·24	10	5	16749·7		16744·8	
5969·24	10	4	16752·5		16747·6	
5968·64	4?	—	16754·2		16749·3	
5968·49	12	3	16754·7		16749·8	16752
5967·87	11	5	16756·4		16751·5	16754
5967·66	10	4	16757·0		16752·1	16755
5967·39	7	3	16757·8		16752·9	
5967·18	3?	—	16758·3		16753·4	
5966·81	10	5	16759·4		16754·5	
5966·42	10d	3	16760·6		16755·7	16759
5966·33						
5965·40	4	2	16763·3		16758·4	16761
5965·05	8	3	16764·3		16759·4	16762
5963·98	4	1	16767·3		16762·4	
5963·71	5	2	16768·1		16763·2	
5963·30	4	2	16769·2		16764·3	
5962·65	10	4	16771·1		16766·2	
5962·35	6	1	16771·9		16767·0	
5961·89	5	1	16773·2		16768·3	
5961·59	8	3	16774·0		16769·1	
5960·82	3?	2	16776·2		16771·3	
5960·38	2?	—	16777·4		16772·5	
5960·13	9	3	16778·2		16773·3	
5959·84	5	2	16779·0		16774·1	
5959·39	6	2	16780·2		16775·3	
5959·14	6	2	16780·9		16776·0	
5958·98	8	—	16781·4		16776·5	
5958·85	12	5	16781·8		16776·9	16779
5958·48	12	5d	16782·9		16778·0	16781
5958·42						
5958·02	12	5	16784·1		16779·2	16782
5957·95	4?	—	16784·3		16779·4	
5957·37	5	2	16785·9		16781·0	
5957·27		2	16786·2		16781·3	
5956·76	8?	—	16787·6		16782·7	16785
5956·50	9	4	16788·4		16783·5	16786
5955·90	6	2	16790·1		16785·2	
5955·10	11	5	16792·3		16787·4	16790
5954·61	6	2	16793·7		16788·8	
5953·88	3?	—	16795·8		16790·9	
5953·61	8	2	16796·5		16791·6	16795
5952·81	8	—	16798·8		16793·9	16797
5951·68	10	5	16802·0		16797·1	
5951·50	8	2	16802·5		16797·6	
5951·05	9	3	16803·7		16798·8	16801
5950·91	4?	—	16804·2		16799·3	
5950·49	10	4	16805·3		16800·4	16803
5950·35	8	2	16805·7		16800·8	
5949·92	11	4	16807·0		16802·1	16804
5949·80	7	1	16807·3		16802·4	16805
5949·69	5	—	16807·6		16802·7	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5949·42	10	6	16808·4	4·9	16803·5	16807
5949·25	11	6	16808·8		16803·9	
5949 18	2 ?	—	16809·0		16804·1	16808
5948·96	8	3	16809·7		16804·8	
5948·78	4 ?	—	16810·2		16805·3	
5948·35	10	2	16811·4		16806·5	
5947·54	8	3	16813·7	5·0	16808·7	
5947·24	12	6	16814·5		16809·5	16811
5947·02	11	5	16815·1		16810·1	16813
5946·73	4	—	16816·0		16811·0	
5946·18	(5 ?)	—	16817·5		16812·5	
5946·14	12	6	16817·6		16812·6	16816
5945·81	10	4	16818·6		16813·6	
5945·39	10	4	16819·8		16814·8	16817
5944·84	10	4	16821·3		16816·3	16819
5944·42	10d	5	16822·5		16817·5	16820
5943·58	3 ?	2	16824·9		16819·9	16822
5943·22	3 ?	2	16825·9		16820·9	
5942·73	12	6	16827·3		16822·3	16826
5942·57	12	6	16827·7		16822·7	
5942·35	8	—	16828·4		16823·4	16827
5941·73	10	5	16830·1		16825·1	16828
5941·19	11	5	16831·6		16826·6	
5941·01	8	4	16832·2		16827·2	16830
5940·54	9	4	16833·5		16828·5	16832
5940·27	4	—	16834·2		16829 2	
5940·03	8	3	16834·9		16829·9	16833
5938·72	7	2	16838·6		16833·6	
5938·41	4	—	16839·5		16834·5	
5938·21	9	4	16840·1		16835·1	16837
5938·01	8	3	16840·6		16835·6	
5937·58	8	2	16841·9		16836·9	
5937·37	6	1	16842·5		16837·5	
5937·22	2	—	16842·9		16837·9	
5936·85	4	2	16844·0		16839·0	
5936·42	4	2	16845·2		16840·2	
5935·96	10	4	16846·5		16841·5	16846
5935·66	2	—	16847·3		16842·3	
5935·38	7	2	16848·1		16843·1	16847
5934·32	9	2	16851·1		16846·1	16849
5934·14	4	—	16851·6		16846·6	
5933·91	7	3	16852·3		16847·3	16851
5933·16	5	1	16854·4		16849·4	
5932·96	11	5	16855·0		16850·0	
5932·51	3	1	16856·3		16851·3	
5932·28	12	6	16856·9		16851·9	16855
5932·13	3	1	16857·4		16852·4	16857
5931·17	8	3	16860·1		16855·1	
5930·77	8	2	16861·2		16856·2	
5929·57	6	1	16864·6		16859·6	16862
5929·25	9	2	16865·5		16860·5	
5928·99	9	3	16866·3		16861·3	16863
5928·69	4	—	16867·1		16862·1	
5928·53	11d	5	16867·7		16862·7	
5928·43						
5927·86	6	—	16869·5		16864·5	16868

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5926·94	5	2	16872·1	5·0	16867·1	16869
5926·74	8	2	16872·7		16867·7	
5926·29	4	1	16874·0		16869·0	
5925·82	4	1	16875·3		16870·3	
5925·19	12	5	16877·1		16872·1	
5924·96	6	1	16877·7		16872·7	
5924·49	12	6	16879·1		16874·1	16877
5923·98	11	5	16880·5		16875·5 }	
5923·82	11	5	16881·0		16876·0 }	
5923·39	7	3	16882·2		16877·2	16881
5922·87	9	3	16883·7		16878·7 }	16882
5922·66	10	4	16884·3		16879·3 }	
5922·54	8	4	16884·7		16879·7	
5921·83	7	3	16886·7		16881·7	16885
5921·39 } 5921·25 }	6d	3	16888·1		16883·1	16886
5920·73	10	4	16889·8		16884·8	16888
5920·29	6	2	16891·1		16886·1	
5919·83	12	6	16892·4		16887·4	
5919·22	12	5	16894·1		16889·1	16893
5918·62	12	4	16895·8		16890·8	16894
5918·08	7	2	16897·4		16892·4	16896
5917·53	8	3	16898·9		16893·9	
5917·29	5	—	16899·6		16894·6	
5916·93	6	2	16900·6		16895·6	
5916·77	7	2	16901·1		16896·1	16900
5916·21	6	2	16902·7		16897·7	16901
5915·77	9	4	16904·0		16899·0	16902
5915·52	9	4	16904·7		16899·7 }	16903
5915·06	9	4	16906·0		16901·0 }	
5914·64	4	1	16907·2		16902·2 }	16906
5913·92	4	1	16909·3		16904·3 }	
5913·15	10	4	16911·5		16906·5	16909
5912·82	8	3	16912·4		16907·4	
5912·70	8	3	16912·7		16907·7	
5912·15	7	2	16914·3		16909·3	
5911·99	7	2	16914·8		16909·8	
5911·56	5	2	16916·0		16911·0	
5911·33	5	—	16916·7		16911·7	
5911·05	3 ?	—	16917·5		16912·5	
5910·95 }	11d	{ 4	16917·8		16912·8 }	16916
5910·87 }		{ 3	16918·0		16913·0 }	
5910·79	4	—	16918·2		16913·2	
5910·32	3 ?	—	16919·6		16914·6	
5910·25	11d	4	16919·8		16914·8	16918
5909·57	7	3d	16921·7		16916·7	16919
5909·14	10	5	16922·9		16917·9 }	16921
5908·85	3	1	16923·8		16918·8 }	
5908·36	9	4	16925·2		16920·2	16923
5907·98	9	5	16926·2		16921·2	16923
5907·58	8	3	16927·4		16922·4	16925
5907·42	8	4	16927·9		16922·9	
5907·16	6	—	16928·6		16923·6	16927
5906·53	6	2	16930·4		16925·4 }	16928
5906·38	6	2	16930·8		16925·8 }	
5905·68	5	—	16932·8		16927·8	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity: Horizon	Intensity: Medium Altitude	Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo: Rowland	Oscillation Frequency in Vacuo: Ångström
5905·46	9	3	16933·5	5·0	16928·5	16932
5905·25	7	1	16934·1		16929·1	16932
5904·97	5	3	16934·9		16929·9	
5904·53	5	3	16936·2		16931·2	
5904·16	8	3	16937·2		16932·2	
5904·04	8	3	16937·6		16932·6	
5903·87	7	4	16938·0		16933·0	16937
5903·64	9	2	16938·7		16933·7	
5903·34	(4 ?)	3	16939·6		16934·6	16938
5902·90	5	2	16940·8		16935·8	
5902·73	4	—	16941·3		16936·3	
5902·53	5	4	16941·9		16936·9	
5902·25	10	3	16942·7		16937·7	16941
5902·13	8	3	16943·0		16938·0	
5901·62	12	7	16944·5		16939·5	
5901·43	9	3	16945·0		16940·0	16944
5901·07	8	3	16946·1		16941·1	
5900·60	7	2	16947·4		16942·4	16945
5900·22	11	6	16948·5		16943·5	16947
5900·06	10	5	16949·0		16944·0	16948
5899·17	10	4	16951·5		16946·5	16949
5898·94	6	1	16952·2		16947·2	16950
5898·56	6	2	16953·3		16948·3	16951
5898·33	11	7	16954·0		16949·0	16953
5898·10	6	2	16954·6		16949·6	
5897·90	6	—	16955·2		16950·2	
5897·58	9	4	16956·1		16951·1	16954
5897·22	6	—	16957·1		16952·1	16955
5896·97	10	4	16957·8		16952·8	16956
5896·72	4b	—	16958·6		16953·6	
5896·58	11	4	16959·0		16954·0	16957
5896·37	5b	—	16959·6		16954·6	
5895·89	5	2	16961·0		16956·0	
5895·64	1b	—	16961·7		16956·7	
5895·26	10	3	16962·8		16957·8	16960
5895·11	10	3	16963·2		16958·2	16962
5894·71	5	1	16964·4		16959·4	16963
5894·51	9	4	16964·9		16959·9	
5893·88	4 ?	—	16966·8		16961·8	
5893·72	10	4	16967·2		16962·2	16965
5893·52	4	1	16967·8		16962·8	
5893·24	9	4	16968·6		16963·6	16966
5892·88	6	4	16969·6		16964·6	16967
5892·59	10	5	16970·5		16965·5	16968
5892·40	(3 ?)	1	16971·0		16966·0	
5892·09	4 ?	2	16971·9		16966·9	
5891·87	11	5	16972·5		16967·5	16970
5891·73	10	4	16972·9		16967·9	16971
5891·37	8	5	16974·0		16969·0	16972
5891·11	6	1	16974·7		16969·7	
5890·92	7	1	16975·3		16970·3	16973
5890·42	7	1	16976·7		16971·7	
5890·34	14	—	16977·0		16972·0	
5889·78	11	5	16978·6		16973·6	16977
5889·23	5	2	16980·2		16975·2	
5888·86	9	4	16981·2		16976·2	16980

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity: Horizon	Intensity: Medium Altitude	Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo: Rowland	Oscillation Frequency in Vacuo: Ångström
5888·01	7	3	16983·7	5·0	16978·7	
5887·82	9	5	16984·2		16979·2	16982
5887·60	4b	1	16984·8		16979·8	
5887·36	10	5	16985·5		16980·5	16984
5887·10	3	1	16986·3		16981·3	
5886·84	6	1	16987·0		16982·0	
5886·55 5886·51	9	4d	16987·9		16982 9	16985
5886·34	3b	—	16988·5		16983·5	
5886·12	10d	5	16989·1		16984·1	16987
5885·77	6	2	16990·1		16985·1	16988
5885·68	6	2	16990·4		16985·4	16989
5885·02	3?	2	16992·3		16987·3	
5884·68	4?	2	16993·3		16988·3	
5884·34	8	2	16994·3		16989·3	
5884·04	11	7	16995·1		16990·1	16994
5883·52	4	1	16996·6		16991·6	16995
5883·12	8	2	16997·8		16992·8	
5882·92	8	3	16998·4		16993·4	
5882 58	6	—	16999·4		16994·4	16997
5882·51	6	—	16999·6		16994·6	16998
5882·02	8	3	17001·0		16996·0	
5881·91	8	3	17001·3		16996·3	
5881·79	6	—	17001·6		16996·6	17000
5881·53 5881·45	(5?)	4d	17002·5		16997·5	
5881·21	8	3	17003·3		16998·3	
5881·03	8	3	17003·8		16998·8	
5880·84	8	2	17004·4		16999·4	
5880·65 5880·59	6d	3	17005·0		17000·0	17003
5879·98	6	4	17006·9		17001·9	17004
5879·77	9	4	17007·5		17002·5	
5879·64	9	4	17007·8		17002·8	17007
5879·24	7	1	17009·0		17004·0	17008
5877·66	6	1	17013·6		17008·6	
5877·43	6	2	17014·2		17009·2	17012
5877·21	4	1	17014·9		17009·9	
5877·04	3	—	17015·4		17010·4	17013
5876·44	9	3	17017·1		17012·1	17015
5876·22	9	3	17017·7		17012·7	
5875·71	9	3	17019·2		17014·2	
5875·55	5	1	17019·7		17014·7	
5875·24	5	3	17020·6		17015·6	17019
5874·77 5874·68	4d	2	17022·1		17017·1	17020
5874·37	4	1	17023·1		17018·1	
5874·02	5	2	17024·1		17019 1	
5873·71	7	2	17025·0		17020·0	
5873·37	6	5	17026·0		17021·0	
5872·37	5	1d	17028·9		17023 9	
5872·09	4	1	17029·7		17024·7	
5871·85	4	1	17030·4		17025·4	
5871·38	9	3	17031·8		17026·8	
5871·26	5	—	17032·1		17027·1	
5870·73	9	3	17033 7		17028·7	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5869·94	6	3	17036·0	5·0	17031·0	
5869·82	6	3	17036·3		17031·3	
5868·89	7	2	17039·0		17034·0	
5867·71	9	5	17042·4		17037·4	
5866·31	4	2	17046·5		17041·5	
5865·90	7	2	17047·7		17042·7	
5865·66	7	2	17048·4		17043·4	
5864·90	4	1	17050·6		17045·6	
5864·38	6	3	17052·1		17047·1	
5863·37	4	1	17055·0		17050·0	
5863·18	4	—	17055·6		17050·6	
5861·86	5	2	17059·4		17054·4	
5861·77	6	2	17059·7		17054·7	
5859·73	10	8	17065·6		17060·6	
5859·04	3	—	17067·6		17062·6	
5857·13	4?	2	17073·2		17068·2	
5854·97	5	2	17079·5		17074·5	
5854·52	4	2	17080·8		17075·8	
5853·43	(4?)	3	17084·0		17079·0	
5853·29	(4?)	2	17084·4		17079·4	
5851·52	8	3	17089·6		17084·6	
5851·34	3	—	17090·1		17085·1	
5851·05 } 5850·97 }	8	1d	17091·1		17086·1	
5849·89	5	3	17094·3		17089·3	
5848·82	5	1	17097·5		17092·5	
5846·09	(4?)	2	17105·4		17100·4	
5845·76	8	1	17106·4		17101·4	
5845·15	(4?)	2	17108·2		17103·2	
5844·00	3	2	17111·6		17106·6	
5842·87	6	2	17114·9		17109·9	
5842·63	5	2	17115·6		17110·6	
5842·29	3?	2	17116·6		17111·6	
5841·33	4	1	17119·4		17114·4	
5841·02	6	1	17120·3		17115·3	
5839·84	4	2	17123·8		17118·8	
5839·61	5	2	17124·4		17119·4	
5838·90	4	3	17126·5		17121·5	
5838·64	6	3	17127·3		17122·3	
5838·44	4	2	17127·9		17122·9	
5837·46	4	1	17130·7		17125·7	
5836·62	4	1	17133·2	5·0	17128·2	
5835·80	5	3	17135·6	5·1	17130·5	
5834·78	4?	2	17138·6		17133·5	
5834·20	8	4	17140·3		17135·2	
5833·51	4	1	17142·4		17137·3	
5832·64	4d	2	17144·9		17139·8	
5832·07	4	1	17146·6		17141·5	
5831·55	4	—	17148·1		17143·0	
5831·14	4d	2	17149·3		17144·2	
5830·28	5	2	17151·8		17146·7	
5830·06	4	2	17152·5		17147·4	
5829·56	4	2	17154·0		17148·9	
5828·90	4	2	17155·9		17150·8	
5828·49	5	1	17157·1		17152·0	
5827·89	7	1	17158·9		17153·8	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5827·13	(3?)	2	17161·1	5·1	17156·0	
5826·47	(3?)	2	17163·0		17157·9	
5825·32	4?	2	17166·4		17161·3	
5824·90	4	—	17167·7		17162·6	
5824·61	4	2	17168·5		17163·4	
5823·82	4	2	17170·9		17165·8	
5823·53	5	—	17171·7		17166·6	
5823·36	(3?)	2	17172·2		17167·1	
5823·13	(3?)	2	17172·9		17167·8	
5822·56 }	4	{ 3	17174·6		17169·5	
5822·50 }		{ 3	17174·8		17169·7	
5822·27	4?	—	17175·4		17170·3	
5822·10	4	3	17175·9		17170·8	
5821·51	3	2	17177·7		17172·6	
5821·23	3?	—	17178·5		17173·4	
5821·12	3?	—	17178·8		17173·7	
5820·98	3	1	17179·2		17174·1	
5820·62	4	1	17180·3		17175·2	
5820·13	4?	2	17181·7		17176·6	
5819·51	3	2	17183·6		17178·5	
5819·07	4	—	17184·9		17179·8	
5818·76	4	2	17185·8		17180·7	
5818·34	6	2	17187·0		17181·9	
5818·18	(3?)	2	17187·5		17182·4	
5817·79	4	1	17188·7		17183·6	
5817·59	4	1	17189·2		17184·1	
5817·00	4	2	17191·0		17185·9	
5815·80	4	2	17194·5		17189·4	
5815·30	(5?)	4	17196·0		17190·9	
5814·96 } 5814·87 }	(5?)	5d	17197·2		17192·1	
5813·74	4	2	17200·6		17195·5	
5813·13	4	2	17202·5		17197·4	
5812·75	3	2	17203·6		17198·5	
5811·61	3	1	17207·0		17201·9	
5811·35	2?	—	17207·7		17202·6	
5809·94	3	—	17211·9		17206·8	
5809·70	4	1	17212·6		17207·5	
5809·07	4	2	17214·5		17209·4	
5808·84	3	—	17215·2		17210·1	
5807·86	4	2	17218·0		17212·9	
5806·79	4?	—	17221·2		17216·1	
5806·44	4	1	17222·3		17217·2	
5806·14	3	1	17223·2		17218·1	
5805·14	3	2	17226·1		17221·0	
5804·07	3?	—	17229·3		17224·2	
5803·57	5	1	17230·8		17225·7	
5803·16	3	1	17232·0		17226·9	
5802·91	4	1	17232·7		17227·6	
5802·74	4	1	17233·2		17228·1	
5802·53	3?	2	17233·9		17228·8	
5802·40	3	1	17234·3		17229·2	
5802·03	3?	2	17235·4		17230·3	
5801·39	4	2	17237·3		17232·2	
5801·04	5	2	17238·3		17233·2	
5800·78	5	1	17239·1		17234·0	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5800·17	3	—	17240·9	5·1	17235·8	
5800·01	4	2	17241·4		17236·3	
5799·49	5	1	17242·9		17237·8	
5799·25	(3?)	2	17243·6		17238 5	
5798·66 } 5798·61 }	4d	1	17245·4		17240·3	
5798·36	9	6	17246·3		17241·2	
5798·24	4	—	17246·6		17241·5	
5798·03	9	6	17247·2		17242·1	
5797·77	4	2	17248·0		17242·9	
5797·53	3	—	17248·7		17243·6	
5797·32	2	1	17249·3		17244·2	
5796·99	4	2	17250·3		17245·2	
5796·65	4	—	17251·3		17246·2	
5796·42 } 5796·28 }	(4?)	4d	17252·2		17247·1	
5796·10	4	1	17253·0		17247·9	
5795·77	3	1	17254·0		17248·9	
5795·51	2	1	17254·7		17249·6	
5795·31	3	2	17255·3		17250·2	
5794·93	2	1	17256·5		17251·4	
5794·71	2	—	17257·1		17252·0	
5794·51	4	2	17257·7		17252·6	
5794·02	5	—	17259·2		17254·1	
5793·67	4	1	17260·2		17255·1	
5793·06	3	—	17262·0		17256·9	
5792·30 } 5792·15 }	4d	2	17264·5		17259·4	
5791·84	4	2	17265·7		17260·6	
5791·48	3	1	17266·7		17261·6	
5791·01	4	—	17268·1		17263·0	
5790·33	5	3	17270·2		17265·1	
5790·05	4	2	17271·0		17265·9	
5789·80	2	—	17271·8		17266·7	
5789·35	5	—	17273·1		17268·0	
5789·03	5	2	17274·1		17269·0	
5788·87 } 5788·76 }	4d	2	17274·7		17266·6	
5788·31	4	1	17276·2		17271·1	
5787·63	2?	1	17278·2		17273·1	
5787·41	6	2	17278·9		17273·8	
5787·19	5	3	17279·5		17273·4	
5786·91 } 5786·76 }	3d	1	17280·6		17275·5	
5782·67	4	1	17293·1		17288·0	
5782·05	4	—	17294·9		17289·8	
5780·34	5	1	17300·0		17294·9	
5779·50	4	2	17302·5		17297·4	
5778·11	3	1	17306·7		17301·6	
5777·83	3	1	17307·5		17302·4	
5776·56	6	—	17311·3		17306·2	
5776·31	4	2	17312·1		17307·0	
5776·19	6	—	17312·4		17307·3	
5775·82	3	1	17313·6		17308·5	
5775·60	3	—	17314·2		17309·1	
5774·65	4	2	17317·1		17312·0	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5774·38	4?	3	17317·9	5·1	17312·8	
5774·15	4?	3	17318·6		17313·5	
5773·79	3	2	17319·6		17314·5	
5773·34	7	2	17321·0		17315·9	
5773·16	7	2	17321·5		17316·4	
5772·88	4?	—	17322·4		17317·3	
5772·77	8	2	17322·7		17317·6	
5771·81	7	2	17325·6		17320·5	
5771·70	5	—	17325·9		17320·8	
5771·53	6	2	17326·4		17321·3	
5770·89	2	1	17328·3		17323·2	
5770·41	7	1	17329·8		17324·7	
5770·31	4	1	17330·1		17325·0	
5769·60	7	1	17332·2		17327·1	
5769·38	6	2	17332·9		17328·8	
5768·71	3	—	17334·9		17329·8	
5768·55	5	2	17335·4		17330·3	
5767·84	3	1	17337·5		17332·4	
5767·32	8	2	17339·1		17334·0	
5767·13	3	—	17339·6		17334·5	
5766·47	6	2	17341·6		17336·5	
5766·08	3	1	17342·8		17337·7	
5765·88	2?	—	17343·4		17338·3	
5765·70	2	1	17343·9		17338·8	
5765·14	2	1	17345·6		17340·5	
5764·84	2	1	17346·5		17341·4	
5764·48	4	1	17347·6		17342·5	
5764·15	(3?)	2	17348·6		17343·5	
5763·64 }	8	2	17350·1		17345·0	
5763·55 }	7	2	17350·4		17345·3	
5762·76	3	1	17352·8		17347·7	
5761·75	8	3	17355·8		17350·7	
5761·36	3	2	17357·0		17351·9	
5759·72	(4?)	3	17362·0		17356·9	
5759·39	5	1	17363·0		17357·9	
5759·04	5	2	17364·0		17358·9	
5758·59	4	2	17365·4		17360·3	
5758·08	3	2	17366·9		17361·8	
5757·65	3?	2	17368·2		17363·1	
5757·41	3	—	17368·9		17363·8	
5757·16	5	1	17369·7		17364·6	
5756·68	3	1	17371·1		17366·0	
5755·91	5	1	17373·5		17368·4	
5755·64	5	2	17374·3		17369·2	
5754·37	9	2	17378·1		17373·0	
5754·13	5	2	17378·8		17373·7	
5753·55	3	1	17380·6		17375·5	
5753·13	8	3	17381·8		17376·7	
5752·68	3	2	17383·2		17378·1	
5751·99	6	2	17385·3		17380·2	
5750·74	4	2	17389·1		17384·0	
5750·56	3?	—	17389·6		17384·5	
5749·49	4d	2	17392·9		17387·8	
5748·12	7	5	17397·0		17391·9	
5747·83	7	5	17397·9		17392·8	
5747·45	3	1	17399·0		17393·9	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5747·02	3	1	17400·3	5·1	17395·2	
5746·67	3	1	17401·4		17396·3	
5745·92	10	2	17403·7		17398·6	
5745·44	4	1	17405·1		17410·0	
5745·05	9	1	17406·3		17401·2	
5744·37	3	1	17408·3		17403·2	
5744·11	2 ?	—	17409·1		17404·0	
5743·94	5	2	17409·7		17404·6	
5743·58	6d	2	17410·8		17405·7	
5742·72	4	1	17413·4		17408·3	
5742·30	10	1	17414·6		17409·5	
5741·49	4 ?	2	17417·1		17412·0	
5741·10	4	2	17418·3		17413·2	
5740·19	4	2	17421·0		17415·9	
5739·59	4 ?	3	17422·8		17417·7	
5739·14	4	1	17424·2		17419·1	
5738·57	4	3	17426·0		17420·9	
5738·30	5	2	17426·8		17421·7	
5737·82	11	2	17428·2		17423·1	
5737·53 } 5737·38 }	5	2d	17429·3		17424·2	
5737·16	5	2	17430·2		17425·1	
5736·49	4	1	17432·3		17427·2	
5735·96	3	—	17433·9		17428·8	
5735·74	9	2d	17434·6		17429·5	
5735·20	4	2	17436·2		17431·1	
5734·66	4	1	17437·8		17432·7	
5733·80	7	1	17440·4		17435·3	
5733·27 } 5733·11 }	8	2d	17442·3	5·1	17437·2	
5732·77	4	1	17443·6	5·2	17438·4	
5731·46	4	2	17447·6		17442·4	
5731·02	4	2	17448·9		17443·7	
5730·27	5	1	17451·2		17446·0	
5729·95	9	2	17452·2		17447·0	
5729·78	9	2	17452·7		17447·5	
5729·30	4 ?	2	17454·1		17448·9	
5728·92	7	2	17455·3		17450·1	
5728·58	7	2	17456·3		17451·1	
5727·95	3	1	17458·2		17453·0	
5727·76	(4 ?)	3	17458·8		17453·6	
5727·18	10	7	17460·6		17455·4	
5726·98	9	3	17461·2		17456·0	
5726·79	6	—	17461·8		17456·6	
5726·16	3	1	17463·7		17458·5	
5726·00	3	1	17464·2		17459·0	
5724·70	3	1	17468·2		17463·0	
5724·54	(4 ?)	3	17468·7		17463·5	
5724·12	9	1	17469·9		17464·7	
5723·74	4	1	17471·1		17466·9	
5722·98	2 ?	—	17473·4		17468·2	
5722·34	6	2	17475·4		17470·2	
5722·07	10	2	17476·2		17471·0	
5721·92	4	1	17476·6		17471·4	
5721·05	5	3	17479·3		17472·1	
5720·51	8	2	17481·0		17478·8	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5719·94	5	2	17482·7	5·2	17477·5	
5719·75	11	2	17483·3		17478·1	
5719·15	8	2	17485·1		17479·9	
5718·51	4	2	17487·1		17481·9	
5717·65	9	2	17489·7		17484·5	
5717·13	4	2	17491·3		17486·1	
5716·16	(3?)	2	17494·3		17489·2	
5715·87	3	1	17495·2		17490·0	
5714·27 } 5714·21 }	8	4d	17500·1		17494·9	
5712·76	4	2	17504·7		17499·5	
5711·69	5	1	17507·9		17502·8	
5711·50	8	1	17508·5		17503·4	
5710·97	5	1	17510·2		17505·0	
5710·07	4	2	17512·9		17507·8	
5709·18	3	2	17515·6		17510·4	
5707·26	7	—	17521·5		17517·3	
5706·69	4	1	17523·3		17518·1	
5705·24	(3?)	2	17527·7		17522·5	
5704·67	4	—	17529·5		17524·3	
5704·42	7	2	17530·3		17525·1	
5704·05	3	—	17531·4		17526·2	
5703·44	6	1	17533·3		17528·1	
5702·95	5	3	17534·8		17529·6	
5702·12	3	1	17537·3		17532·1	
5700·90	9	2	17541·1		17535·9	
5700·78	3?	—	17541·5		17536·3	
5700·17	2?	1	17543·3		17538·1	
5699·52	10	4	17545·3		17540·1	
5699·14	3	1	17546·5		17541·3	
5698·93	6	—	17547·1		17541·9	
5698·75 } 5698·60 }	(5?)	5 5	17547·7 17548·2		17542·5 17543·0	
5698·31	10	2	17549·1		17543·9	
5697·92 } 5697·79 }	4d	— —	17549·5 17550·4		17544·3 17545·2	
5697·51	4	1	17551·5		17546·3	
5697·31	(3?)	2	17552·1		17546·9	
5696·96	8	1	17553·2		17548 0	
5696·58	4	1	17554·4		17549·2	
5696·06	8d	3	17556·0		17550·8	
5695·65	3	1	17557·2		17552·2	
5694·34	6	1	17561·3		17556·1	
5693·76	8	—	17563·1		17557·9	
5693·38	4	2	17564·3		17559·1	
5692·91	8	2	17565·7		17560·5	
5692·57	10	2	17566·8		17561·6	
5692·35	4	1	17567·4		17562·2	
5690·81	4	—	17572·2		17567 0	
5690·62	10	6	17572·8		17567·6	
5690·42	8	—	17573·4		17568·2	
5690·07	5	—	17574·5		17569·3	
5689·74	9	3	17575·5		17570·3	
5689·20	4	1	17577·2		17572·0	
5688·74	6	2	17578·6		17573·4	
5687·80	5	2	17581·5		17576·3	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5687·66	10	3	17581·9	5·2	17576·7	
5686·49	5	3	17585·5		17580·3	
5686·38	(5?)	4	17585·9		17580·7	
5685·97	5	1	17587·1		17581·9	
5685·61	8	2	17588·3		17583·1	
5685·55	4?	—	17588·5		17583·3	
5685·28	5	2	17589·3		17584·1	
5684·05	9	3	17593·1		17587·9	
5682·98	6	—	17596·4		17591·2	
5681·97	8	2	17599·5		17594·3	
5681·74	3	—	17600·2		17595·0	
5680·98	5	1	17602·6		17597·4	
5680·10	5	2	17605·3		17600·1	
5679·79	5	2	17606·3		17601·1	
5676·94	8	2	17615·1		17609·9	
5674·79	4	1	17621·8		17616·6	
5674·49	4	—	17622·7		17617·5	
5674·42	4	1	17622·9		17617·7	
5674·15	5	1	17623·8		17618·6	
5672·07	4	—	17630·2		17625·0	
5671·58	4	2	17631·8		17626·6	
5670·50	5	2	17635·1		17629·9	
5668·70	3	—	17640·7		17635·5	
5667·94	3	1	17643·1		17637·9	
5666·03	4	2	17649·0		17643·8	
5652·01	(3?)	2	17692·8		17687·6	
5634·37	(2?)	2	17748·2		17743·0	
5633·23	(2?)	2	17751·8		17746·6	
5631·02	(2?)	2	17758·8	5·2	17753·6	
5575·53	3	—	17935·5	5·3	17930·2	
5548·72	3	2	18022·2		18016·9	
5529·92	3?	2	18083·4		18078·1	
5523·03	3	1	18106·1	5·3	18100·8	
5520·23	3	1	18115·2	5·4	18109·8	
5519·95	(3?)	2	18116·1		18110·7	
5519·41	4	1	18117·9		18112·5	
5516·49	3	2	18127·5		18122·1	
5516·09	3	1	18128·8		18123·4	
5515·52	4	1	18130·7		18125·3	
5513·91	4	2	18136·0		18130·6	
5511·37	5	2	18144·3		18138·9	
5509·64	4	2	18150·0		18144·6	
5509·11	2	—	18151·7		18146·3	
5507·67	(3?)	2	18156·5		18151·1	
5506·57	(3?)	2	18160·1		18154·7	
5505·37	4	2	18164·1		18158·7	
5502·00	3?	—	18175·2		18169·8	
5500·44	3	2	18180·4		18175·0	
5499·70	3	1	18182·8		18177·4	
5499·39	3	—	18183·8		18178·4	
5499·05	4	2	18185·0		18179·6	
5498·56	3	—	18186·6		18181·2	
5496·98	5	2	18191·8		18186·4	
5496·33	3	—	18194·0		18188·6	
5495·65	4	—	18196·2		18190·8	
5491·70	3	2	18209·3		18203·9	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5491·22	4	2	18210·9	5·4	18205·5	
5491·04	(4?)	—	18211·5		18206·1	
5485·20	3	2	18230·9		18225·5	
5484·28	3	1	18233·9		18228·5	
5482·76	4	2	18239·0		18233·6	
5482·09	6d	4d	18241·2		18235·8	
5480·52	(4?)	—	18246·4		18241·0	
5479·51	3	2	18249·8		18244·4	
5478·93	4	2	18251·7		18246·3	
5478·32	7	2	18253·8		18248·4	
5475·41	2	—	18263·5		18258·1	
5473·54	5	3	18269·7		18264·3	
5470·35	8	2	18280·4		18275·0	
5466·90	6	2	18291·9		18286 5	
5466·17	3	2	18294·4		18289·0	
5465·47	5	2	18296·7		18291·3	
5465·21	6	3	18297·6		18292·2	
5464·84	(3?)	2	18298·8		18293·4	
5462·59	(7?)	7	18306·3		18300·9	
5462·18	5	2	18307·7		18302·2	
5459·54	7	—	18316·6		18311·2	
5459·05	(3?)	2	18318·2		18312·8	
5458·65	5	2	18319·5		18316·1	
5457·62	7	4	18323·0		18317·6	
5457·34	4	2	18323·9		18318·5	
5456·58	8	4	18326·5		18321·1	
5455·28	4	2	18330·9		18325·5	
5452·54	3	1	18340·1		18334·7	
5451·26	4	2	18344·4		18339·0	
5450·43	4	1	18347·2		18341·8	
5449·57	5	1	18350·1		18344 7	
5449·16	4	2	18351·5		18348·1	
5449·07	4	2	18351·8		18348·4	
5448·22	6	2	18354·6		18349·2	
5446·25	3	1	18361·3		18355·9	
5444·23	4	2	18368·1		18362·7	
5442·51	7	4	18373·9		18368·5	
5439·91	3	1	18382·7		18377·3	
5439·06 } 5438·99 }	5d	2	18385·6		18380·2	
5438·43	4	2	18387·7		18382·3	
5438·16	4	2	18388·6		18383·2	
5437·36	6	4	18391·3		18385·9	
5437·23	6	4	18391·7		18386·3	
5435·76	7	2	18396·7		18391·3	
5435·49	3 ?	—	18397·6		18392·2	
5434·92	6	1	18399·5		18394·1	
5434·04	4	2	18402·5		18397·1	
5431·82	5	3	18410·0		18404·6	
5431·60	5	3	18410·8		18405·4	
5431·25	3	1	18412·0		18406·6	
5430·46	4	3	18414·7		18409·3	
5428·88 } 5428·78 }	7d	3 3	18420·0 18420·4		18414·6 18415·0	
5428·09 } 5427·89 }	5d	3 3	18422·7 18423·4		18417·3 18418·0	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5427·17	5d	2	15425·8	5·4	18420·4	
5426·85	(3 ?)	3	18426·9		18421·5	
5426·42	(3 ?)	3	18428·4		18423·0	
5425·96	3	2	18429·9		18424·5	
5425·09	4	1	18432·9		18427·5	
5423·66	3	—	18437·7		18432·3	
5423·06 } 5422·98	9d	3	18439·9		18434·5	
5421·31	7d	5	18445·7		18440·3	
5420·71	7	2	18447·8		18442·4	
5420·49 }	(8 ?)	6	18448·5		18443·1	
5420·41 }			18448·8		18443·4	
5419·49	8	3	18451·9		18447·5	
5418·43	5	2	18455·5	5·4	18450·1	
5418·07	5	3	18456·8	5·5	18451·3	
5417·39	5	1	18459·1		18453·6	
5416·68	4	2	18461·5		18456·0	
5416·47	4	—	18462·2		18456·7	
5416·25	6	2	18463·0		18457·5	
5415·66	4	1	18465·0		18459·5	
5415·18	4	—	18466·6		18461·1	
5414·86	4	1	18467·7		18462·2	
5414·50	8	3	18468·9		18463·4	
5414·23	7	5	18469·8		18464·3	
5413·30	8d	4	18473·0		18467·5	
5413·00	7	4	18474·0		18468·5	
5412·34	7	2	18476·3		18470·8	
5411·92	5	1	18477·7		18472·2	
5410·61	(3 ?)	3	18482·2		18476·7	
5409·80	5	3	18485·0		18479·5	
5408·98	5	—	18487·8		18482·3	
5408·40	6	2	18489·8		18484·3	
5408·20	6	2	18490·4		18484·9	
5407·25	4	1	18493·7		18487·2	
5402·43	4	2	18510·2		18504·7	
5400·07	3	1	18518·3		18512·8	
5398·66	4	—	18523·1		18517·6	
5398·12	7	1	18525·0		18519·5	
5391·31	(3 ?)	2	18548·4		18542·9	
5390·93	(3 ?)	2	18549·7		18544·2	
5386·02	5	1	18566·6		18561·1	
5383·01	(3 ?)	3	18577·0		18571·5	
5367·85	(3 ?)	3	18629·4		18523·9	
5366·95	(3 ?)	2	18632·6		18527·1	
5364·09	(3 ?)	2	18642·5		18537·0	
5362·32	4	3	18648·6		18543·1	
5361·08	3	2	18653·0		18547·5	
5360·51	2 ?	—	18654·9	5·5	18549·4	
5359·95	2 ?	—	18656·9	5·6	18651·3	
5354·10	3d	2	18677·3		18671·7	
5353·07	(3 ?)	2	18680·9		18675·3	
5351·82	3	1	18685·2		18679·6	
5351·28	4	—	18687·1		18681·5	
5350·52	4 ?	3	18689·8		18684·2	
5349·23	4	1	18694·3		18688·7	
5348·93	4 ?	3	18695·3		18689·7	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5347·62	3 ?	2	18699·9	5·6	18694·3	
5342·21	3 ?	3	18718·8		18713·2	
5340·42	3 ?	2	18725·1		18719·5	
5322·64	(3 ?)	2	18787·7		18782·1	
5316·19	3 ?	1	18810·5		18804·9	
5314·02	3 ?	1	18818·2		18812·6	
5290·52	4	2	18901·7		18896·1	
5288·00	5	3	18910·7		18905·1	
5283·58	(7 ?)	5	18926·6		18921·0	
5277·19	3	1	18949·5		18943·9	
5275·40	(7 ?)	6	18955·9		18950·3	
5275·11	(7 ?)	6	18957·0		18951·4	
5251·66	4 ?	2	19041·6		19036·0	
5251·52	3	1	19042·1	5·6	19036·5	
5205·40	4	2	19210·8	5·7	19205·1	
5205·12	4	2	19211·9	5·7	19206·2	
5143·94	5d	—	19440·4	5·8	19434·6	
5142·10	(2 ?)	2	19447·3		19441·5	
5132·25	(3 ?)	2	19484·6		19478·8	
5125·20	(10 ?)	8	19511·4		19505·6	
5117·02	(5 ?)	4	19542·6		10536·8	
5116·72	(5 ?)	4b	19543·8		19538·0	
5111·16	4	1	19565·0		19559·2	
5110·20	3	1	19568·7		19562·9	
5105·07	4d	1	19588·4		19582·6	
5103·86 5103·77	(3 ?)	2d	19593·2		19587·4	
5102·57	8	3	19598·0		19592·2	
5101·90	6	2	19600·5		19594·7	
5097·40	5	3	19617·8		19612·0	
5096·23	5	1	19622·4		19616·6	
5095·95	7	2	19623·4		19617·6	
5094·52	8	5	19628·9		19623·1	
5094·20	6	—	19630·2		19624·4	
5094·04	6	2	19630·8		19625·0	
5093·78	2	—	19631·8		19626·0	
5092·58	8	4	19636·4		19630·6	
5092·37	7	5	19637·2		19631·4	
5091·32	4	2	19641·3		19635·5	
5090·39 5090·25	4d	2	19645·1		19639·3	
5089·92	4	2	19646·7		19640·9	
5089·36	(4 ?)	4	19648·8		19643·0	
5089·23	(4 ?)	3	19649·3		19643·5	
5086·75	6	2	19658·9		19653·1	
5086·21	6	—	19661·0		19655·2	
5085·39	4	2	19664·2		19658·4	
5085·11	3	—	19665·3		19659·5	
5084·64	5	2	19667·1		19661·3	
5083·91	7	2	19669·9		19664·1	
5083·12	5	2	19673·0		19667·2	
5080·53	8	5	19683·0		19677·2	
5079·70	7	1	19686·2		19680·4	
5078·57	6	3	19690·6		19684·8	
5078·18	3	1	19692·1		19686·3	
5077·57	7	3	19694·5		19688·7	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5076·65	9	2	19698·0	5·8	19692·2	
5075·98	5	2	19700·6		19694·8	
5074·43	3?	1	19706·6		19700·8	
5073·89	4?	3	19708·7		19702·9	
5073·09	7	6	19711·8		19706·0	
5072·06	4	—	19715·8		19710·0	
5071·40	5	1	19718·4		19712·6	
5071·21	5	2	19719·2		19713·4	
5070·35	5	—	19722·5		19716·7	
5070·04	5	3	19723·7		19717·9	
5069·53	4	3	19725·3		19719·5	
5069·26	5	7	19726·7		19720·9	
5068·88	11?	9	19728·2		19722·4	
5068·45	5	4	19729·9		19723·1	
5067·29	11	8	19734·4		19728·6	
5066·49	6	3	19737·5		19731·7	
5066·04	9	6	19739·3		19733 5	
5065·85	(3?)	3	19740·0		19734·2	
5063·74	4	1	19748·2	5·8	19742·4	
5062·44	(3?)	2	19753·3	5·9	19747·4	
5061·18	6	2	19758·2		19752·3	
5060·56	5	2	19760·7		19754·8	
5060·19	10	8	19762·1		19756·2	
5059·58	3	1	19764·5		19758·6	
5058·32	6	2	19769·4		19763·5	
5057·69	9	—	19771·9		19766·0	
5056·95	5	5	19774·8		19768·9	
5056·58	10	3	19776·2		19770·3	
5056·44	5	2	19776·8		19770·9	
5055·28	4	2	19781·3		19776·4	
5054·52	4	—	19784·3		19778·4	
5053·92	6	3	19786·6		19780·7	
5053·64	5d	3	19787·7		19781·8	
5052·52	6	1	19792·1		19786·2	
5052·31	6?	3	19792·9		19787·0	
5050·49	4	2	19800·1		19794·2	
5049·72	5	1	19803·1		19797·2	
5047·56	(4?)	3	19811·5		19805·6	
5047·14	(4?)	3b	19813·2		19807·3	
5046·65	3	—	19815·1		19809·2	
5046·35	3	2	19816·3		19810·4	
5045·76	4	—	19818·6		19812·7	
5044·73	3	2	19822·7		19816·8	
5044·08	8	3	19825·2		19819·3	
5043·13	8	3	19829·0		19823·1	
5042·97	8	3	19829·6		19823·7	
5042·62	3	2	19831·0		19825·1	
5041·46	8	4	19835·5		19829·6	
5040·67	4	3	19838·6		19832·7	
5040·39	5	3	19839·7		19833·8	
5039·86	7	2	19841·8		19835·9	
5039·03	5	—	19845·1		19839·2	
5038·91	5	2	19845·6		19839·7	
5038·42	9	7	19847·5		19841·6	
5038·23	(5?)	—	19848·3		19842·4	
5038·00	5	2	19849·1		19843·2	

THE TELLURIC LINES OF THE SOLAR SPECTRUM—*continued.*

Becker (Rowland)	Intensity		Oscillation Frequency	Reduction to Vacuum	Oscillation Frequency in Vacuo	
	Horizon	Medium Altitude			Rowland	Ångström
5037·82	9	4	19849·9	5·9	19844·0	
5037·43	8	3	19851·4		19845·5	
5035·83	8	2	19857·7		19851·8	
5035·19	5	—	19860·2		19854·3	
5034·80	8	1	19861·8		19855·9	
5034·69	7	—	19862·2		19856·3	
5034·45	5	2	19863·1		19857·2	
5034·23	5	2	19864·0		19858·1	
5033·17	5	2	19868·2		19862·3	
5031·34	6	2	19875·4		19869·5	
5030·52	4	1	19878·7		19872·8	
5029·82	8	—	19881·4		19875·5	
5028·98	6	2	19884·7		19878·8	
5028·72	6	1	19885·8		19879·9	
5026·26	6	—	19895·5		19889·6	
5025·94	6	3	19896·8		19890·9	
5024·81	6	2	19901·3		18895·4	
5024·39	6	3	19902·9		19897·0	
5019·49	4	—	19922·4		19916·5	
5019·26	4	3	19923·3		19917·4	
5018·65	5?	—	19925·7		19919·8	
5018·55	11	9	19226·1		19920·2	
5018·00	5	1	19928·3		19922·4	
5017·23	5	2	19931·3		19925·4	
5016·07	5	1	19935·9		19930·0	
5015·33	4	2	19938·9		19933·0	
5006·90	4	2	19972·4		19966·5	
5004·48	5	3	19982·1		19976·2	
5002·75	4	2d	19989·0		19983·1	
4998·14	5	3	20007·4		20001·5	
4996·13	3	1	20015·5		20009·6	
4988·50	(3?)	2	20046·1		20040·2	
4984·91	4	1	20060·5		20054·6	
4983·69	4	1	20065·5		20059·6	
4981·48	6	2	20074·4		20068·5	
4975·95	3?	2	20096·7	5·9	20090·8	
4969·61	(3?)	2	20122·3	6·0	20116·3	
4969·41	(3?)	2	20123·1		20127·1	
4964·80	(4?)	2	20141·8		20135·8	
4913·10	2	—	20353·7		20147·7	
4902·52	4?	3	20397·7		20191·7	
4902·21	4?	3	20399·0		20193·0	

GADOLINIUM CHLORIDE.[1]

Spark	Intensity	Oscillation Frequency	Spark	Intensity	Oscillation Frequency
6223	b	16069	4929	s	20282
5827	b	17156	4908	s	20369
5723	s	17472	4888	sb	20452
5705	s	17523	4793	sb	20858
5698	b	17545	4633	sb	21578
5669	s	17635	4617	sb	21653
5101	b	17598	4467	sb	22380

[1] Lecoq de Boisbaudran, *Compt. Rend.*, cxi. 472.

HYDROGEN (VACUUM-TUBE).[1]

Wave-length (Rowland)	Intensity	Oscillation Frequency in Vacuo		Wave-length (Rowland)	Intensity	Oscillation Frequency in Vacuo	
		Observed	Calculated[2]			Observed	Calculated[2]
C 6563·042		15232·3	15232·4	3963·3	3		
5084·9				3962·4	2		
5055 2				3944·5	3		
5013·15				3924·5	3		
4973·3	6			3889·3	4		
4928·8	6			α 3889·15	7	25704·8	25705·0
4876·1	4			3879·7	3		
F 4861·49	20	20563·7	20563·7	3872·45	4		
4838·3	4			3871·8	5		
4797·9	4			3867·2	4		
4764 0	3			3863·3	5		
4719·2	5			3861·7	4½		
4683·95	5			3858·85	4		
4634·15	6			3836·6	3		
4580·1	4			β 3835·6	n	26063·7	26064·1
4534·8	2			3804·9	6		
4498·75	4			3803·2	4		
4461·1	5			γ 3798·0	n	26321·7	26321·3
4447·85	3			3797·7	4		
4412·35	5			3796·8	5		
G′ 4340·66	15	23031·1	23031·3	3771·7	3		
4212·65	7			δ 3770·7	<1 : n	26512·3	26511·8
4205·2	8			3770·3	2		
4195·9	6			ε 3752·05	<1	26657·6	26656·7
4177·25	8			3741·3	2		
4171·35	7			ζ 3734·15	<1	26771·8	26769·5
h 4101·85	10	24371·9	24371·8	3732·2	3		
4079·0	5			3722·2	2		
4069·75	7			η 3721·8	<1	26860·6	26858·6
4067·0	7			3716·05	1		
4062·6	6			θ 3711·9	?	26932·3	26931·0
3997·25	4			3702·2	3		
3992·0	4			3684·3	5		
3990·15	6			3682·05	4		
3987·0	3			3674·5	5		
3982·75	4			3644·8	1		
H 3970·25	8	25179·8	25180·0	3633·5	2		

[1] Ames, *Phil. Mag.*, xxx. 1890, p. 33.

[2] Calculated from Balmer's formula $\frac{1}{\lambda} = 27418{\cdot}3\,(1 - 4m^{-2})$. The lines marked C, F, G′, h, H, α, β, γ, δ, ε, ζ, η, θ constitute the 'elementary line-spectrum' of hydrogen; all the other lines given above are found in Hasselberg's list of lines of the 'secondary' or 'compound line-spectrum' of hydrogen. *See* 'Index,' pp. 50 and 212.

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APPENDIX D.

Gallium (Spark Spectrum).

Lecoq de Boisbaudran C. R. cxiv. p. 815 (1892).

α 4170·4, 10s and β 4031·9, 6s in solution of the chloride with metallic gallium. Also lines at 6412·4, 6326·7, 5994·9, 5851·5, 5428·9, 5369·5, 4864·6, 4255·8.

Lithium.

Kayser and Runge (' Ueber die Spectren der Elemente.' Berlin, 1890).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
6708·2	0·2	10sr	6706·7 Thalén	1·96	4·4	14902·7
6103·77	0·03	10sr	6102·2 ,,	1·80	4·8	16378·5
4972·11	0·1	6bn	4971·2 ,,	1·47	5·9	20106·3
4602·37	0·1	10sr	4602·2 ,,	1·37	6·5	21721·4
4273·44	0·2	4n	4273·3 ,,	1·28	7·0	23393·3
4132·44	0·2	8nr	4131·7 Liveing & Dewar	1·24	7·2	24191·6
3985·94	0·2	2n	3984·5 ,,	1·20	7·6	25080·6
3915·2	0·2	6nr	3913·5 ,,	1·18	7·7	25533·8
3838·3	3·0	1n	3838·? ,,	1·15	7·8	26045·4
3794·9	5·0	4n	3799·0 ,,	1·14	7·9	26343·3
3718·9	5·0	2n		1·12	8·1	26881·5
3670·6	5·0	1n		1·11	8·2	27235·3
3232·77	0·03	8sr	3232·0 ,,	0·99	9·5	30923·7
2741·39	0·03	6sr	2741·0 ,,	0·85	11·4	36466·4
2562·60	0·03	4sr	2567·5 ,,	0·80	12·3	39010·6
2475·13	0·1	4sr	2475·0 ,,	0·78	12·7	40389·2
2425·55	0·1	2sr	2425·5 ,,	0·77	13·1	41214·7
2394·54	0·2	1sr	2394·5 ,,	0·76	13·2	41748·5
*(2373·9)			2373·5 ,,	0·75	13·4	42111·4
*(2359·4)			2359·0 ,,	0·75	13·5	42370·2

Sodium.

Kayser and Runge (' Ueber die Spectren der Elemente.' Berlin, 1890).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
*(8200·3)			8199 Abney	absent	?	?	12197 ?
*(8188·3)			8187 ,,	absent			12215 ?
6161·15	0·1	8n	6160·2 Thalén	6161·50 ?	1·81	4·8	16225·9
6154·62		8n	6154·4 ,,	6154·49 ?	,,	,,	16242·2
5896·16		10sr	5895·13 ,,	5896· D.	1·74	5·0	16955·2
5890·19		10sr	5889·12 ,,	5890·19 ,,	,,	,,	16972·4
5688·26	0·15	8n	5687·3 ,,	5688·42 ?	1·68	5·2	17574·9
5682·90		8n	5681·5 ,,	5682·58 ?	,,	,,	17587·4
5675·92	0·15	2n	5674·4 ,,	5675·90 ?	1·67	,,	17613·1
5670·40		2n	5668·0 ,,	absent	,,	,,	17630·2

SODIUM—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5153·72	0·1	6n	5155·0 Thalén	5153·60 ?	1·53	5·8	19397·7
5149·19		6n	5152·7 ,,	5149·29 ?	,,	,,	19414·7
4983·53	0·2	6n	4983·3 ,,	4983·71 ?	1·48	5·9	20060·2
4979·30		6n	4982·0 ,,	4979·41 ?	,,	,,	20077·2
			4980·5 L. & D.				
4752·19	0·15	4n	4751·4 ,,	4752·30 ?	1·41	6·2	21036·7
4748·36		4n	4747·5 ,,	4748·36 ?	,,	,,	21053·7
4669·4	0·5	4n	4667·5 ,,	4669·47 ?	1·39	6·4	21409·6
4665·2		4n	4663·7 ,,	4665·32 ?	,,	,,	21428·9
4546·03	0·2	2n	4543·6 ,,	4546·10 ?	1·35	6·5	21990·7
4542·75		2n	4540·7 ,,	absent	,,	,,	22004·6
4500·0	1·0	2n	4496·4 ,,	?	1·34	6·0	22216·2
4494·3		2n	4494·5 ,,	?	,,	,,	22244·4
(4423·7)			4423·0 ,,	?	1·32	6·7	22598·8
(4420·2)			4419·5 ,,	?	,,	,,	22616·7
(4393·7)			4393 ,,	?	1·31	6·8	22753·1
(4390·7)			4390 ,,	?	,,	,,	22768·6
(4343·7)			4343 ,,	?	1·30	6·9	23014·9
(4325·7)			4325 ,,	?	1·29	,,	23110·7
3303·07	0·03	8r	3301·2 Cornu	3303·07	1·01	9·3	30265·6
3302·47		8r	3308·8 ,,	3302·47	,,	,,	30271·1
2852·91	0·05	6r	2853·3 L. & D.		0·88	10·9	35041·0
2680·46	0·1	4r	2679·0 ,,		0·84	11·6	37295·4
2593·98	0·1	2r	2593·3 ,,		0·81	12·1	38538·7
2543·85	0·1	1r			0·80	12·4	39298·1
2512·23	0·2	1r			0·79	12·5	39792·8

* Lines within brackets not measured by Kayser and Runge.

POTASSIUM.

Kayser and Runge ('Ueber die Spectren der Elemente.' Berlin, 1890).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
7699·3	5·0	10nr	7696·5 Deslandres	absent	2·2	3·7	12984·5
7665·6		10nr	7663·2 ,,	,,	2·2	3·7	13041·5
6938·8	0·5	8	6946 L. de B.*	,,	2·03	4·2	14407·5
6911·2	0·5	8	6913 ,,	,,	2·02	4·3	14465·1
5832·23	0·05	4n	5831 ,,	,,	1·72	5·1	17141·0
5812·54		2n	5812 ,,	,,	1·71	5·1	17199·1
5802·01		6n	5802·1 Thalén	,,	1·71	5·1	17230·3
5782·67		6n	5782·6 ,,	,,	1·70	5·1	17288·0
5359·88	0·15	4n	5353·6 ,,	,,	1·59	5·5	18651·6
5343·35		2n	5338·6 ,,	,,	1·58	5·6	18709·2
5340·08		4n	5334·5 L. & D.†	,,	1·58	5·6	18720·7
5323·55		4n	5322·6 Thalén	,,	1·57	5·6	18778·9

POTASSIUM—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements		Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
						$\lambda +$	$\frac{1}{\lambda} -$	
5112·68		2n	5112	L. de B.	absent	1·51	5·8	19553·4
5099·64	0·20	2n	5098	L. & D.	?	1·51	5·8	19603·4
5097·75		1n	5095	L. de B.	?	1·51	5·8	19610·7
5084·49		2n	5081	„	?	1·51	5·8	19661·9
4965·5		1n	4963	„		1·47	6·0	20133·0
4956·8	1·0	1n	4956	L. & D.	?	1·47	6·0	20168·3
4952·2		1n	4950			1·47	6·0	20187·0
4943·1		1n	4942			1·47	6·0	20224·2
(4870·8)			4870			1·44	6·1	20526·1
(4863·8)			4863			1·44	6·1	20555·6
(4856·8)			4856			1·44	6·1	20585·3
(4850·8)			4850			1·44	6·1	20610·8
(4808·8)			4808			1·43	6·2	20790·7
(4803·8)			4803			1·43	6·2	20812·4
(4796·8)			4796			1·42	6·2	20842·8
(4788·8)			4788			1·42	6·2	20877·6
(4759·8)			4759			1·41	6·2	21004·8
4047·36	0·03	6r	4045	„	absent	1·21	7·4	24700·1
4044·29		8r	4042	„	„	1·21	7·4	24718·8
3447·49	0·03	6r	3445·0	„	?	1·05	8·8	28997·8
3446·49		8r	3443·6	„	?	1·05	8·8	29006·2
3217·76	0·03	4r	3216·5	„		0·98	9·5	31068·0
3217·27		6r				0·98	9·5	31072·7
3102·37	0·1	2r	3101·0	„		0·95	9·9	32223·5
3102·15		4r				0·95	9·9	32225·8
3034·94	0·1	4r	3033·0	„		0·93	10·1	32939·5
2992·33	0·15	2r	2992·0	„		0·92	10·3	33408·5
2963·36	0·2	1r	2963·4	„		0·91	10·4	33735·8
2942·8	1·0	1r	2942·0	„		0·91	10·5	33970·8

* L. de B. = Lecoq de Boisbaudran. † L. & D. = Liveing and Dewar.

RUBIDIUM.

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. III. 5. Berlin, 1890).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
7950·	5·0	10br	7951·0 L. de B.	absent	2·3	3·6	12575·0
7811·	5·0	10br	7800·0 „	„	2·3	3·8	12799·7
6298·7	0·2	4n	6296·7 Thalén	? 6298·65	1·85	4·6	15871·7
6206·7	0·2	4n	6204·2 „	absent	1·83	4·7	16106·9
6159·8	0·2	1n	6160·2 „	„	1·81	4·8	16229·5
6071·2	0·2	2n	6070·2 „	„	1·79	4·9	16466·3
5724·41	0·15	6n	5724·0 L. de B.	„	1·69	5·2	17464·8
5654·22	0·15	2n	5650·0 „	? 5654·1	1·67	5·2	17680·7
5648·18	0·15	4n		absent	1·67	5·2	17699·6
5431·83	0·15	2n	5429·0 „	„	1·61	5·4	18405·6

RUBIDIUM—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5362·94	0·2	2n	5359·0 L. de B.	? 5362·96	1·59	5·5	18641·0
(5259·8)			5259·0 ,,		1·56	5·6	19006·5
(5194·8)			5194·0 ,,		1·54	5·7	19244·3
(5161·8)			5161·0 ,,		1·53	5·7	19367·4
(5085·8)			5085·0 ,,		1·51	5·8	19656·8
(5021·8)			5021·0 ,,		1·49	5·9	19907·3
4215·72	0·03	6r	4216·0 ,,	absent	1·26	7·1	23713·6
4201·98	0·03	8r	4202·0 ,,	,,	1·26	7·1	23791·2
3591·74	0·05	4r		? 3591·63	1·09	8·5	27833·2
3587·23	0·05	6r		?	1·09	8·5	27868·2
3351·03	0·05	2r		? 3351·03	1·02	9·1	29832·2
3348·86	0·05	4r		? 3348·80	1·02	9·1	29851·8

CÆSIUM.

Kayser and Runge ('Ueber die Spectren der Elemente.' Berlin, 1890).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
6973·9	5·0	6n	6975·0 L. de B.	absent	2·0	4·1	14335·1
6723·6	5·0	8n	6723·0 ,,	,,	1·97	4·3	14868·7
6213·4	0·5	2n	6219·0 ,,	,,	1·83	4·7	16089·5
6010·6	0·3	4n	6007·0 ,,	,,	1·77	4·9	16632·4
5845·1	0·5	4n	5850·0 ,,	? 5845·2	1·72	5·0	17103·3
5664·0	0·5	6n	5662·0 ,,	? 5664·25	1·67	5·2	17650·2
5635·1	0·5	4n	5637·0 ,,	absent	1·66	5·2	17740·7
5579·3	0·5	1n	5572·0 ,,	,,	1·65	5·3	17918·1
(5501·9)			5501·0 ,,		1·63	5·4	18170·1
5465·8	0·1	2n	5464·0 ,,	,,	1·62	5·4	18290·1
(5410·9)			5410·0 ,,		1·60	5·5	18475·7
(5345·9)			5345·0 ,,		1·58	5·6	18700·3
(5310·8)			5310·0 ,,		1·57	5·6	18824·0
(5257·8)			5257·0 ,,		1·56	5·6	19013·8
4593·34	0·05	6r	4592·2 Lockyer	? 4593·31	1·37	6·5	21764·2
4555·44	0·05	8r	4554·9 ,,	absent	1·35	6·5	21945·3
3888·83	0·1	4r			1·17	7·7	25707·0
3876·73	0·1	6r			1·16	7·7	25787·2
3617·08	0·3	2r			1·09	8·4	27638·2
3611·84	0·2	4r			1·09	8·4	27678·3

FLUORINE.

Moissau, 'Ann. Chem. Phys.' (6), xxiv. p. 224.

Strong lines at 677, 6405, 634, 623; weaker ones at 714, 704, 691, 6875, 6855, 6835; and very feeble ones at 744, 740, 734.

Magnesium.

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
5711·56	0·15	2	5710·7 L. & D.	5711·32 ?	1·69	5·2	17503·1
5528·75	0·10	6	5527·4	5528·625 ?	1·63	5·3	18082·0
5183·84	0·03	10r 3†	5183·0	5183·798	1·54	5·7	19285·0
5172·87	0·03	10r 3†	5172·0	5172·867	1·53	5·7	19325·9
5167·55	0·03	8r 3†	5167·0	5167·580	1·53	5·7	19345·8
4730·42	0·25	1n		4730·22 ?	1·40	6·3	21133·5
4703·33	0·05	8n	4703·5	4703·173	1·40	6·3	21255·2
4571·33	0·05	4	4570·5 „	4571·25	1·36	6·5	21869·0
4352·18	0·05	8n	4351·2 „	4352·10	1·30	6·9	22970·1
4167·81	0·10	1n	4166·0 „	4167·40 ?	1·25	7·1	23986·3
4058·45	1·00	2n	4057·3 „	4058·10 ?	1·22	7·4	24632·5
3987·08	1·00	2n		?	1·20	7·6	25073·4
3838·44	0·03	10r 4*	3837·9 H. & A.	3838·43	1·15	7·8	26044·4
3832·46	0·03	10r 4*	3832·1 „	3832·43	1·15	7·8	26085·1
3829·51	0·03	10r 4*	3829·2 „	3829·53	1·15	7·8	26105·2
3336·83	0·03	10n 4†	3336·2 „	3336·83	1·02	9·2	29959·4
3332·28	0·03	8n 4†	3331·8 „	3332·27	1·01	9·2	30000·3
3330·08	0·03	8n 4†	3329·1 „	3330·06	1·01	9·2	30020·1
3097·06	0·03	10r 5*	3096·2 „	3097·02	0·95	9·9	32278·8
3093·14	0·03	8r 5*	3091·9 „	3093·20	0·95	9·9	32319·7
3091·18	0·03	8r 5*	3089·9 „	3091·20	0·95	9·9	32340·2
2942·21	0·03	8n 5†	2942·0 L. & D.		0·91	10·5	33977·6
2938·67	0·03	6n 5†	2938·5 „		0·91	10·5	34018·5
2936·99	0·03	4n 5†	2937·5 „		0·91	10·5	34038·0
2936·61	0·05	4	2935·8 H. & A.		0·91	10·5	34042·4
2928·74	0·05	4	2928·1 „		0·90	10·6	34133·8
2915·57	0·05	4	2913·8 „		0·90	10·6	34288·0
2852·22	0·03	10nr 6*	2851·2 „		0·88	10·8	35049·6
2848·53	0·15	4n 6*	2847·9 „		0·88	10·8	35095·0
2846·91	0·15	4n 6*	2845·9 „		0·88	10·9	35114·9
2802·80	0·03	10r	2801·6 „		0·87	11·1	35667·5
2798·07	0·03	4	2796·9 „		0·87	11·1	35727·8
2795·63	0·03	10r	2794·1 „		0·87	11·1	35759·0
2790·88	0·03	4	2789·6 „		0·87	11·1	35818·9
2783·08	0·03	8r	2781·8 „		0·86	11·2	35980·2
2781·53	0·03	8r 6†	2780·7 L. & D.		0·86	11·2	35940·2
2779·94	0·03	10r	2779·4 „		0·86	11·2	35960·8
2778·36	0·03	8r 6†	2778·2 „		0·86	11·2	35981·3
2776·80	0·03	8r 6†	2776·9 „		0·86	11·2	36001·5
2768·57	0·15	4n	2767·5 „		0·86	11·2	36108·5
2765·47	0·15	4n	2764·5 „		0·86	11·2	36149·0
2736·84	0·15	2n 7*	2736·0 „		0·85	11·4	36527·1
2733·80	0·15	2n 7*	2732·5 „		0·85	11·4	36567·7
2732·35	0·15	2n 7*	2731·0 „		0·85	11·4	36587·1
2698·44	0·15	2n 7†	2698·0 „		0·83	11·6	37046·9
2695·53	0·15	2n 7†	2695·0 „		0·83	11·6	37086·9
2693·97	0·15	2n 7†	2693·5 „		0·83	11·6	37108·3

MAGNESIUM—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2672·90	0·20	1n 8*	2672·5 L. & D.		0·83	11·7	37400·8
2669·84	0·20	1n 8*	2670·0 ,,		0·83	11·7	37443·7
2668·26	0·20	1n 8*	2668·5 ,,		0·83	11·7	37465·9
2649·30	0·50	1n 8†	2649·0 ,,		0·83	11·8	37734·0
2646·61	0·50	1n 8†	2646·0 ,,		0·83	11·8	37772·4
2645·22	0·50	1n 8†			0·83	11·8	37792·2
2633·13	1·00	1n	2633·0 ,,		0·82	11·9	37965·7
2630·52	1·00	1n	2630·0 ,,		0·82	11·9	38003·4
(2605·4)			2605·0 ,,		0·82	12·0	38369·8

The lines marked * and † form a series of triplets, of which the oscillation frequencies (in air) can be calculated (very nearly) from the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, where $a = 39796{\cdot}10$ for the *first* line, 39836·79 for the *second*, and 39857·00 for the *third* line of the triplets, $b = 130398$, $c = 1432090$ in the triplets marked *; and in those marked †, $a = 39836{\cdot}74$ for the *first* line, 39877·95 for the *second*, 39897·91 for the *third*, $b = 125471$, $c = 518781$. The figure preceding the sign * or † shows the value of n.

NOTE.—Lines at 4808·0, 3895·0, 3893·0, 3852·0, 3848·0, 3073·5, 3050·6, 3046·7 are given by Liveing and Dewar.

CALCIUM (ARC SPECTRUM).

Kayser and Runge (' Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
6499·85	0·10	4	6498·3 Å. & Th.	6499·870	1·91	4·5	15380·5
6493·97	0·10	4	6492·4 ,,	6493·998	1·91		15394·4
6471·85	0·10	4		6471·889	1·90		15447·0
6462·75	0·10	6r	6462·0 ,,	6462·840§	1·90		15468·8
6449·99	0·10	1	6449·3 ,,	6450·028	1·90		15499·5
6439·36	0·10	10r	6438·5 ,,	6439·301	1·89	4·5	15525·0
6169·87	0·10	6		6169·774	1·82	4·8	16203·0
6169·36	0·10	4	6168·0 Thalén	6169·2	1·82		16204·3
6166·75	0·10	4	6165·5 ,,	6166·6	1·81		16211·2
6163·98	0·10	4	6163·6 ,,	6163·95	1·81		16218·5
6162·46	0·10	10r 3†		6162·395d	1·81		16222·5
6161·60	0·10	2	6161·1 ,,	6161·45	1·81		16224·8
6122·46	0·05	10r 3†	6121·2 ,,	6122·432	1·80		16328·5
6102·99	0·05	8r 3†	6101·2 ,,	6102·940	1·80	4·8	16380·6
5867·94	0·10	6bv		5867·78 ?	1·73	5·0	17036·8
5857·77	0·10	10n	5856·4 ,,	5857·675	1·73	5·0	17066·3
5603·06	0·05	8		5603·099t	1·65	5·3	17842·1

CALCIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
5601·51	0·05	8	5600·3 Thalén	5601·45			17847·0
5598·68	0·05	8n	5597·3 ,,	5598·7			17856·0
5594·64	0·05	10n	5593·4 ,,	5594·7			17869·9
5590·30	0·05	8	5588·9 ,,	5588·9			17882·8
5588·96	0·05	10	5587·5 ,,	5588·976			17883·9
5582·16	0·05	8	5580·9 ,,	5582·192	1·65	5·3	17908·9
5513·07	0·10	8		5513·194	1·63	5·4	18133·3
5349·66	0·05	10	5348·4 ,,	5349·6	1·58	5·6	18687·2
5270·45	0·05	10	5269·2 ,,	5270·497§	1·56	5·6	18968·1
5265·79	0·05	8	5264·6 ,,	5265·75			18984·9
5264·46	0·05	6	5263·2 ,,	5264·4			18989·7
5262·48	0·05	6	5261·4 ,,	5262·4			18996·8
5261·93	0·05	6	5261·0 ,,	5261·885			18998·8
5260·58	0·05	4		5260·6	1·56	5·6	19003·7
5189·05	0·05	6		5188·947d	1·54	5·7	19265·7
5041·93	0·05	8b^v	5041·0 ,,	5041·9	1·50	5·9	19827·8
4878·34	0·10	10b^v	4877·3 ,,	4878·35§	1·45	6·1	20492·7
4847·22	0·20	4b^r	4846·5 ,,	?	1·44		20624·3
4833·85	1·00	1b^r	4832·5 ,,	4833·8 ?	1·43		20681·3
4823·04	1·00	1b^r	4822·3 ,,	?	1·43	6·1	20727·7
4807·47	1·00	1b^r	4806·7 ,,	4807·4 ?	1·43	6·2	20794·8
4685·40	0·50	4b^r	4684·3 ,,	4685·4 ?	1·39	6·3	21336·6
4624·71	0·50	1b^r	4622·4 ,,	4624·7 ?	1·37	6·4	21616·6
4586·12	0·10	10	4585·3 ,,	4586·1	1·36	6·5	21798·4
4581·66	0·10	8	4580·8 ,,	4581·7§	1·36	6·5	21819·6
4578·82	0·10	8		4578·723	1·36	6·5	21833·2
4527·17	0·10	6	4526·3 ,,	4527·1	1·35	6·6	22082·2
4512·73	1·00	1n		4512·5 ?	1·34		22152·9
4509·89	1·00	1n		4509·9 ?			22166·9
4508·04	1·00	1n		4508·1 ?	1·34	6·6	22176·0
4456·81	0·03	4	4456·1 ,,	4456·8	1·33	6·7	22430·9
4456·08	0·03	8r 4*	4456·3 ,,	4456·05			22434·5
4454·97	0·03	10r	4454·3 ,,	4455·0	1·33		22440·1
4435·86	0·03	8r 4*	4435·1 ,,	4435·9	1·32		22536·8
4435·13	0·03	10r	4434·4 ,,	4435·1			22540·5
4425·61	0·03	10r 4*	4424·9	4425·6	1·32	6·7	22589·0
4355·41	0·10	6b	4355·0 ,,	4355·22 ?	1·30	6·9	22953·0
4318·80	0·03	8r		4318·828	1·29		23147·7
4307·91	0·03	8r		4308·023§	1·29		23206·2
4302·68	0·03	10r	4302·1 ,,	4302·7	1·28		23234·4
4299·14	0·03	6	4298·5 ,,	4299·15		6·9	23253·6
4289·51	0·03	8r	4289·0 ,,	4289·6		7·0	23305·7
4283·16	0·03	8r	4282·7 ,,	4283·15	1·28		23340·2
4240·58	0·10	4	4240·0 ,,	4240·6	1·27	7·0	23574·7
4226·91	0·03	10r	4226·4 ,,	4226·9	1·26	7·0	23650·0
4098·82	0·10	4b^v	4098·0 ,,	4098·8	1·23	7·3	24390·0
4095·25	0·10	2b^v	4094·3 ,,	4095·1	1·23	7·3	24411·2
4092·83	0·10	2b^v	4092·2 ,,	4092·9	1·23	7·3	24425·1
3973·89	0·05	6b^v 4†	3972·3 L. & D.	3973·95	1·19	7·6	25156·7
3968·63	0·03	10r	3967·7 ,,	3968·7	1·19		25190·0
3957·23	0·05	6b^v 4†	3956·0 ,,	3957·15	1·19		25262·6
3949·09	0·05	4b^v 4†	3947·9 ,,	3949·2	1·18		25314·7
3933·83	0·03	10r	3933·0 ,,	3934·	1·18	7·6	25412·9
3737·08	0·03	4	3736·4 ,,	3737·2	1·13	8·1	26750·7
3706·18	0·03	4	3705·5 ,,	3706·2	1·12	8·2	26973·8

Calcium (Arc Spectrum)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
3653·62	0·05	4		3653·6	1·10	8·3	27361·8
3644·45	0·05	10r 5*	3644·0 L. & D.	3644·5			27430·7
3630·82	0·05	8r 5*	3631·0 ,,	3630·9		8·3	27533·7
3624·15	0·05	8r 5*	3623·5 ,,	3624·2	1·10	8·4	27584·3
3487·76	0·05	6b^v 5†	3486·5 ,,	3487·8	1·06	8·7	28663·0
3474·98	0·05	4b^v 5†	3474·5 ,,	3474·95	1·05	8·8	28768·3
3468·68	0·05	4b^v 5†	3468·0 ,,	3468·65	1·05	8·8	28820·6
3361·92	0·10	8b^r 6*	3359·5 ,,	3361·95	1·02	9·1	29735·8
3350·22	0·10	8b^r 6*	3347·5 ,,	3350·3	1·02	9·1	29839·7
3344·49	0·10	6b^r 6*	3342·0 ,,	3344·3 ?	1·02	9·1	29890·8
3286·26	0·10	4b^r 6†	3285·0 ,,	3286·1	1·00	9·3	30420·4
3274·88	0·10	2b^v 6†	3273·0 ,,	3274·8	1·00	9·3	30526·2
3269·31	0·10	2b^v 6†	3268·5 ,,	3269·3	1·00	9·4	30578·1
3225·74	0·50	4b^r 7*	3224·5 ,,	3225·9	0·98	9·5	30991·1
3215·15	0·50	4b^r 7*	3213·0 ,,	3215·3	0·98	9·5	31093·2
3209·68	0·50	2b^r 7*	3208·0 ,,	3209·3 ?	0·98	9·5	31146·2
3181·40	0·03	4 7†	3181·0 ,,	3181·4	0·97	9·6	31423·1
3179·45	0·03	6	3179·0 ,,	3179·4		9·6	31442·3
3170·23	0·50	2 7†	3168·5 Cornu	3170·3		9·7	31534·7
3166·95	2·00	1n 7†		3166·9			31566·4
3158 98	0·03	1n	3158·8 L. & D.	3159·0	0·96		31646·1
3150·85	0·50	6 8*	3151·0 ,,	3150·9			31727·8
3140·91	0·50	2n 8*	3141·0 ,,	3140·95		9·7	31828·2
3136·09	0·50	2n 8*	3136·0 ,,	3136·0	0·96	9·8	31887·2
3117·74	1·00	1n 8†	3117·5 ,,	3117·85	0·95		32064·7
3107·96	1·00	1n 8†	3108·0 ,,	3107·9		9·8	32171·5
3101·87	1·00	1n 8† 9*		3102·0 ?		9·9	32228·6
3006·95	0·05	4 9*			0·92	10·2	33246·1
2999·76	0·10	4 9*					33325·8
2997·42	0 05	4					33351·8
2995·06	0·05	4			0·92	10·2	33375·1
2398·66	0·05	8r	2398·0 ,,		0·76	13·1	37676·8
2275·60	0·10	8r			0·73	14·0	43930·4
2200·84	0·10	8r			0·70	14·2	45423·0

The lines marked * and † form a series of triplets, of which the oscillation frequencies (in air) can be calculated, very nearly, from the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, where $a = 33919{\cdot}51$ for the *first* line, 34022·12 for the *second*, and 34073·82 for the *third* line of the triplet, $b = 123547$, $c = 961696$, in the triplets marked *; and in those marked † $a = 34041{\cdot}17$ for the *first* line, 34146·95 for the *second*, and 34199·09 for the *third*, $b = 120398$, $c = 346097$. The figure preceding the sign * or † shows the value of n.

§ Double :—calcium and iron. d Double. t Triple.

Eder and Valetta have observed the following ultra-violet lines in the spark spectrum of calcium ('Kais. Akad. Wissensch.', Wien., Dec. 1892) 2276.0, 3s; 2252·5, 1s; 2208·3, 4s; 2200·5, 1s; 2197·6, 3s; 2170·0, 1s; 2152·3, 1s; 2140·3, 3s; 2133·0, 1s; 2131·2, 1s; 2123·0, 1s; 2112·9, 3s; 2103·2, 2s.

Zinc (Arc Spectrum).

Kayser and Runge (' Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$−	
5182·20	0·10	8b^{v}			1·53	5·7	19286·1
4810·71§	0·03	10r 3†	4809·8 Thalén	4810·68	1·43	6·2	20780·7
4722·26§	0·05	10r 3†	4721·5 „	4722·30	1·40	6·3	21170·0
4680·38§	0·05	10r 3†	4679·6 „		1·39	6·3	21359·5
4630·06§	0·10	8b^{v}		4680·45 ?	1·38	6·4	21591·6
4298·54	0·10	2n		4680·28 ?	1·28	6·9	23256·8
4293·02	0·05	2			1·28	6·9	23286·7
4101·94	0·10	2			1·23	7·3	24371·4
4058·02	0·03	8		4058·10 ?	1·22	7·4	24635·2
4019·75	0·05	4			1·20	7·5	24869·7
3740·12	0·10	4			1·13	8·1	26729·0
3683·63	0·03	8b		3683·70	1·11	8·2	27138·9
3671·71	0·05	6		3671·80 ?	1·11	8·2	27227·1
3572·90	0·03	2			1·08	8·5	27980·0
3515·26	0·20	1n		3515·20 ?	1·07	8·7	28438·7
3346·04§	0·10	4		3346·12	1·02	9·1	29877·0
3345·62§	0·05	8r		3345·72 ?	1·02	9·1	29880·7
3345·13§	0·03	10r 4*	3342·0 L. & D.	3345·10 ?	1·02	9·1	29885·1
3303·03§	0·03	8r 4*		3303·00 ?	1·01	9·3	30265·9
3302·67§	0·03	8r	3301·0 „	3302·72	1·01	9·3	30269·2
3282·42§	0·03	8r 4*	3281·0 „		1·00	9·3	30456·0
3075·99§	0·03	8r			0·94	9·9	32500·0
3072·19§	0·05	10r 4†	3070·0 „		0·94	10·0	32540·1
3035·93§	0·05	10b 4†	3035·0 „		0·93	10·1	32928·7
3018·50§	0·05	8b^{v} 4†	3017·0 „		0·93	10·2	33118·6
2913·63	0·05	4			0·90	10·6	34310·8
2873·39	0·03	6			0·89	10·8	34791·3
2863·43‡	0·03	6			0·89	10·8	34912·3
2833·13	0·03	8r			0·88	10·9	35285·7
2823·27‡	0·03	6			0·88	11·0	35408·9
2802·11	0·03	4r			0·87	11·1	35676·3
2801·00§‡	0·03	10r 5*	2800·0 „		0·87	11·1	35690·4
2781·33	0·20	4b^{r}			0·86	11·2	35942·8
2771·05	0·03	6r			0·86	11·2	36076·2
2770·94§	0·03	8r 5*	2770·0 „		0·86	11·2	36077·6
2756·53§‡	0·10	6r 5*	2756·0 „		0·86	11·3	36266·2
2751·49	0·20	2b^{r}			0·86	11·3	36332·6
2736·96‡	0·20	2b			0·85	11·4	36525·5
2712·60§‖	0·05	8b^{v} 5†	2713·3 „		0·84	11·5	36853·5
2706·64‡	0·05	6			0·84	11·5	36934·7
2697·54	0·10	2b			0·84	11·6	37059·2
2684·29§	0·05	8b^{v} 5†	2684·0 „		0·84	11·6	37242·2
2670·67§	0·05	6b^{v} 5†	2670·5 „		0·83	11·7	37432·1
2663·25	0·05	8			0·83	11·7	37548·1
2623·87	1·00	1n			0·82	11·9	38111·6
2608·65§	0·05	8r 6*	2608·5 „		0·82	12·0	38322·0
2601·03	1·00	2n			0·82	12·1	38434·2
2582·57§‡	0·10	8r 6*	2582·0 „		0·81	12·1	38709·0
2577·34	0·05	4			0·81	12·2	38787·5
2575·15	0·15	2n			0·81	12·2	38820·5
2570·00§	0·10	6r 6*	2569·7 „		0·81	12·2	38898·3

ZINC (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2567·99	0·10	6bᵛ 6†			0·81	12·2	38928·8
2562·70	1·00	2n			0·80	12·3	39009·0
2558·03	0·05	4			0·80	12·3	39080·3
2542·53	0·10	6bᵛ 6†			0·80	12·3	39318·6
2530·34	0·10	2bᵛ 6†			0·80	12·4	39508·0
2516·00§	0·20	6n 7*	2516·0 L. & D.		0·79	12·5	39723·1
2502·11	0·10	4			0·79	12·6	39950·9
2493·67	0·15	4n 7†			0·79	12·6	40088·9
2491·67§	0·15	6n 7*	2491·5 ,,		0·79	12·6	40121·1
2479·85§‡	0·15	4bᵛ 7*	2480·0		0·78	12·7	40312·3
2469·72	0·15	2bᵛ 7†			0·78	12·8	40477·6
2463·47§	0·20	4n 8*	2464·5 ,,		0·78	12·8	40580·4
2457·72‡	0·25	1bᵛ 7†			0·78	12·8	40675·3
2449·76	0·25	1 8†			0·77	12·9	40807·4
2439·94§‡	0·30	4n 8*	2440·0 ,,		0·77	12·9	40971·7
2430·74§	0·30	1n 8*9*	2430·0 ,,		0·77	13·0	41126·7
2427·05	0·30	1n 8†			0·77	13·1	41189·2
2415·54	0·30	1n 8†			0·76	13·1	41385·5
2407·98	0·30	1n 9*			0·76	13·2	41515·4
2393·88	0·05	8			0·76	13·3	41759·9
2246·90	0·15	6			0·72	14·2	44491·4
(2138·3)§						14·8	46751·3

The lines marked * and † form a series of triplets, of which the oscillation frequencies (in air) can be calculated (very nearly) from the formula $10^8\frac{1}{\lambda}=a-bn^{-2}-cn^{-4}$, where $a=42945{\cdot}32$ for the *first* line, 43331·71 for the *second*, and 43521·48 for the *third* line of the triplet, $b=131641$, $c=1236125$ in the triplets marked *; and in those marked † $a=42954{\cdot}59$ for the *first* line, 43343·65 for the *second*, and 43533·32 for the *third*, $b=126919$, $c=632850$. The figure preceding the sign * or † shows the value of n.

§ Ames. 4810·7, 4722·3, 4680·3, 4630·1, 3346·2, 3345·7, 3345·1, 3303·1, 3302·8, 3282·35, 3076·1, 3072·1, 3035·9, 3018·5, 2800·9 (double), 2770·9 (double), 2756·5, 2712·6, 2684·2, 2670·7, 2608·7, 2582·5, 2570·0, 2516·2, 2491·6, 2479·9, 2463·7, 2440·4, 2429·0, 2138·3. ‡ See Iron. ‖ See Cadmium.

STRONTIUM (ARC SPECTRUM).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
6550·53	0·20	6	6550·3 Thalén	absent	1·92	4·5	15261·4
6504·17	0·10	4	6501·8 ,,	6504·35	1·91	..	15370·2
6408·65	0·10	6	6407·3 ,,	6408·80	1·88	4·6	15599·3
6386·74	0·10	6	6387·3 ,,	absent	,,	,,	15652·8
6380·95§	0·10	4	6380·3 ,,	6380·94	,,	4·6	15667·0
5970·38	0·05	4bᵛ	5970·7 ,,	5970·27	1·76	4·9	16744·4
5848·01	0·10	1	5850·1 ,,	absent	1·72	5·0	17094·8
5817·01	0·05	2	5816·0 Huggins	5817·05	1·71	5·1	17185·9

STRONTIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines	Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	1/λ−	
5767·29	0·10	2	5766·0 Huggins	5767·37	1·70	5·1	17334·1
5543·49§	0·05	6b	5543·0 ,,	5543·30	1·64	5·3	18033·8
5540·28	0·05	6	5540·1 Thalén	absent	,,	,,	18044·3
5535·01	0·05	6	5533·0 ,,	5535·05	1·63	,,	18061·5
5522·02	0·05	8	5522·6 ,,	absent	,,	,,	18104·0
5504·48	0·05	10	5503·6 ,,	5504·55	,,	5·4	18162·6
5486·37	0·05	8	5485·1 ,,	absent	1·62	,,	18221·6
5481·15§	0·03	10	5480·1 ,,	5481·05	,,	,,	18239·0
5451·08	0·03	8	5450·0 Huggins	5451·00	1·61	,,	18339·6
5257·12	0·03	10	5256·1 Thalén	5257·15	1·56	5·6	19017·2
5238·76	0·03	10	5238·7 ,,	5238·73	1·55	,,	19082·9
5229·52	0·03	8	5228·7 ,,	absent	,,	5·7	19116·5
5225·35	0·03	8	5225·7 ,,	5225·15	,,	,,	19131·8
5222·43	0·03	8	5223·7 ,,	5222·55	1·54	,,	19142·5
5213·23	0·03	4	5217·0 Huggins	5213·20	,,	,,	19176·3
5156·37	0·05	10	5155·0 ,,	5156·28	1·53	5·8	19387·7
4971·85	0·05	4 4*		absent	1·47	5·9	20107·3
4968·11	0·03	8	4967·6 Thalén	4968·10	,,	6·0	20122·4
4962·45	0·03	10r	4961·6 ,,	4962·55	,,	,,	20145·3
4892·20	0·03	8	4893·0 Huggins	absent	1·45	6·1	20434·6
4876·35	0·03	8r 4*	4876·1 Thalén	4876·57	,,	,,	20501·0
4872·66	0·05	10r	4872·1 ,,	absent	1·44	,,	20516·6
4869·41	0·10	4n		4869·68	,,	,,	20530·3
4868·92	0·03	6n	4865·0 Huggins	absent	,,	,,	20532·3
4855·27	0·05	6n	4853·0 ,,	,,	,,	,,	20590·1
4832·23	0·03	10r 4*	4831·6 Thalén	4832·28	1·43	,,	20688·3
4812·01	0·03	10r	4812·1 ,,	4812·22	,,	6·2	20775·1
4784·43	0·05	6	4783·6 ,,	4784·25	1·42	,,	20894·9
4755·59	0·10	2	4750·0 Huggins	4755·35	1·41	,,	21021·6
4742·07	0·03	6	4740·6 Thalén	absent	,,	6·3	21081·5
4729·93	0·10	2n		4729·82Fe	1·40	,,	21135·7
4722·42‖	0·03	8	4721·1 ,,	absent	,,	,,	21169·3
4678·39‡	0·10	6n		4678·37	1·39	,,	21368·6
4607·52	0·03	10r	4607·6 ,,	4607·51	1·37	6·4	21697·2
4531·54§	0·03	6		absent	1·35	6·6	22061·0
4480·96	0·10	2n		4481·00	1·33	,,	22310·0
4438·22	0·03	6n	4437·0 Lockyer	absent	1·32	6·7	22524·9
4412·82	0·03	4		,,	1·31	,,	22654·6
4361·87	0·03	6n	4365·0 ,,	,,	1·30	6·8	22919·1
4338·00	0·05	6b^v	4336·0 ,,	4338·05	1·29	6·9	23045·2
4326·60	0·03	4	4325·0 ,,	4326·55	,,	,,	23105·9
4319·39	0·05	4b^v	4319·0 Huggins	absent	,,	,,	23144·5
4308·49	0·10	2b^v		4308·37	,,	,,	23203·1
4305·60§	0·10	6	4305·3 Thalén	4305·48	,,	,,	23218·6
4215·66§	0·03	10r	4215·3 ,,	4215·70	1·26	7·1	23714·1
4161·95	0·03	6	4161·0 ,,	4161·97	1·25	7·2	24020·0
4077·88	0·03	10r	4078·5 ,,	4077·90	1·22	7·3	24515·2
4032·51	0·05	4b^r 5*	4031·7 Lockyer 4031·5 ,,	4032·60	1·21	7·4	24791·0
4030·45§	0·05	6b^r	4029·4 ,,	4030·50	,,	,,	24803·7
3970·15	0·05	4b	3969·1 ,,	3970·21	1·19	7·6	25180·4
3969·42§	0·05	4 5*		3969·40Fe	,,	,,	25185·0
3940·91§	0·05	4b^r 5*	3939·5 ,,	3940·80	1·18	,,	25367·2
3705·88	0·20	6n 6*	3705·0 L. & D.	3705·80	1·12	8·2	26975·9
3653·90	0·10	2n	3653·0 ,,	3653·90Fe	1·10	,,	27359·8

STRONTIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3653·32¶	0·10	4n 6*		3653·48	1·10	8·2	27364·2
3629·15	0·10	4 6*		absent	„	8·3	27546·3
3628·62	0·10	2		„	„	8·4	27550·3
3577·45	0·10	1		3577·40	1·08	8·5	27944·4
3547·92	0·30	6n 7*	3547·8 L & D.	3547·92	1·07	8·6	28176·9
3504·70	0·30	2n		3504·80	1·06	8·7	28524·4
3499·40	0·20	6n 7*	3498·0 „	?	„	„	28567·6
3477·33	0·10	2n 7*		3477·30	„	8·8	28748·9
3475·01	0·05	6		absent	„	„	28768·1
3464·58	0·03	8	3464·0 „	3464·60	1·05	„	28854·7
3457·70	0·20	1n 8*	3458·0 „	3457·70	„	„	28912·2
3456·78	0·20	1			„	„	28919·9
3411·62	0·50	1n 8*			1·04	8·9	29303·7
3400·39	0·00	1n 9*			1·03	9·0	29399·4
3390·09	0·50	1n 8*			„	„	29488·7
3380·89	0·03	8	3379·5 „	?	„	„	29569·0
3366·43	0·03	8	3365·5 „	absent	1·02	9·1	29696·0
3351·35	0·05	10r		„	„	„	29829·6
3330·15	0·03	8		3330·08Mg	1·01	9·2	30019·5
3322·32	0·03	8		3322·93	„	„	30090·2
3307·64	0·05	10r	3305·2 „	„	„	„	30223·8
3301·81	0·05	8		3301·77	„	„	30277·2
3200·4§	0·20	2n			0·98	9·6	31236·5
3199·1	0·20	2n			„	„	31249·2
3190·1	0·20	2n			0·97	„	31337·4
3189·4	0·20	2n			„	„	31344·2
3182·4	0·50	1n			„	„	31412·2
3172·3	0·50	1n			„	„	31513·3
2931·98	0·03	8	2931·0 „		0·90	10·5	34096·1

* These lines form a series of triplets for which, in the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, $a = 31030{\cdot}64$ for the *first* line, 31424·67 for the *second*, and 31610·58 for the *third*, $b = 122328$, and $c = 837473$.

§ See Iron. ‖ See Zinc. ‡ See Cadmium. ¶ See Calcium.

CADMIUM (ARC SPECTRUM).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5154·85	0·20	6b^v	5154·2 Thalén	absent	1·53	5·8	19393·4
5086·06	0·05	10r 3†	5086·1 Ames	„	1·51	„	19655·8
4800·09	0·05	10r 3†	4800·0 „	4800·04	1·42	6·2	20826·7
4678·37	0·05	10r 3†	4678·3 „	4678·33	1·39	6·3	21368·7
4662·69	0·10	8b^v		4662·73	1·39	6·4	21440·4
4413·23	0·05	6	4413·1 „	absent	1·32	6·7	22652·4
4306·98	0·05	4b		4307·0	1·29	6·9	23211·2
3981·92	0·10	2b^v		absent	1·19	7·6	25105·9

CADMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3729·21	0·20	4bᵛ		absent	1·12	8·1	26807·2
3649·74	0·03	2bᵛ		„	1·10	8·3	27390·9
3614·58	0·10	4	3614·6 Ames	„	1·09	8·4	27657·3
3613·04	0·05	8r 4*	3613·1 „	„	„	„	27669·1
3610·66	0·03	10r	3610·6 „	3610·67	„	„	27687·3
3595·64	0·10	1bᵛ		absent	„	„	27803·1
3500·09	0·05	4bᵛ	3499·2 H. & A.	„	„	„	28562·3
3467·76	0·03	8r 4*	3467·7 Ames	„	1·05	8·8	28828·3
3466·33	0·03	10r	3466·15 „	3466·35	„	„	28840·2
3403·74	0·03	10r 4*	3403·7 „	3403·80	1·03	9·0	29370·4
3299·11	0·03	4		3299·12	1·01	9·3	30301·9
3261·17	0·03	10r	3261·1 „		1·00	9·4	30654·4
3252·63	0·05	8bᵛ 4†	3252·6 „		0·99	„	30734·9
3133·29	0·20	8bᵛ 4†	3133·2 „		0·96	9·8	31905·5
3081·03	0·10	6bᵛ 4†	3081·0 „		0·94	9·9	32446·8
3005·53	0·20	1bᵛ			0·92	10·2	33261·8
2981·46	0·20	4r			„	10·3	33530·3
2980·75	0·03	8r 5*	2980·8§ „		„	„	33538·3
2961·64	0·15				0·91	10·4	33754·7
2908·85	0·50				0·90	10·6	34367·2
2903·24	0·50				„	10·7	34433·6
2881·34	0·03	5*	2881·0§ „		0·89	„	34695·4
2880·88	0·03				„	10·8	34700·8
2868·35	0·03	5†	2868·2 „		„	„	34852·4
2862·36	0·10				„	„	34925·4
2837·01	0·03	5*	2837·0 „		„	10·9	35237·5
2818·66	0·10				0·87	„	35466·9
2775·09	0·03	5†	2775·0 „		0·86	11·2	36023·7
2764·29	0·10				„	„	36164·4
2763·99	0·03	6*	2763·9§ „		„	„	36168·4
2756·69	0·50				„	11·3	36264·1
2748·68	0·03				„	„	36379·8
2733·97	0·05	5†	2748·45 Bell		0·85	11·4	36565·4
2712·65	0·05	6†	2733·8 Ames		„	„	36852·9
2677·65	0·20	6*	2677·6§ „		0·84	11·7	37334·5
2670·81	0·50				0·83	„	37430·1
2660·45	0·20	7†	2660·3 „		„	„	37575·9
2657·10	0·20				„	11·8	37623·2
2654·65	0·20				„	„	37657·9
2639·63	0·10	6*	2639·4 „		„	„	37872·3
2632·29	0·10	7†			0·82	„	37977·9
2629·15	0·10	6†			„	„	38023·3
2601·99	0·30	8*	2602·1 „		„	12·0	38420·1
2592·14	0·10	6†			0·81	12·1	38566·1
2582·86	0·30	8†			„	„	38704·7
2580·33	0·10	7*	2580·2 „		„	12·2	38742·5
2573·12	0·10		2572·95 Bell		„	„	38851·1
2553·61	0·20	7† 9†			0·80	12·3	39148·0
2544·84	0·20	7*	2544·8 Ames		„	12·4	39280·5
2525·57	0·50	8*	2525·3 „		0·79	12·5	39582·5
2521·74	0·50				„	„	39642·7
2507·93	0·50				„	12·6	39860·9
(2491)		8*	2491·0 „				
2474·15	0·50	8†			0·78	12·7	40405·2
2329·35	0·05		2329·22 Bell		0·74	13·7	42916·7

CADMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2321·23	0·20		2321·14*Bell		0·74	13·7	43066·0
2312·95	0·15		2312·83 ,,		,,	13·8	43221·0
2306·72	0·03		2306·9 L. & D.		0·73	,,	43337·8
2288·10	0·05		2288·1 Ames		,,	13·9	43690·5
2267·53	0·10		2268·9 H. & A.		0·72	14·1	44086·7
2265·13	0·10		{ 2264·88 Bell 2264·42 ,, }		,,	,,	44133·5
2262·36	0·10				,,	,,	44187·5
2239·93	0·05		2241·7 H. & A.		0·71	14·2	44630·0
2194·67	0·20		2194·6 L. & D.		0·70	14·3	45550·6
2170·11	0·50				,,	,,	46066·3
2144·45	0·20		2143·75 Bell		0·69	14·4	46617·6

* These lines form a series of triplets for which in the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, $a = 40755·21$ for the *first* line, 41914·60 for the *second*, and 42456·64 for the *third*, $b = 128635$ and $c = 1289619$.

† These lines form a series of triplets for which $a = 40797·12$ for the *first* line, 41968·80 for the *second*, and 42510·58 for the *third*, $b = 126146$, $c = 555137$.

§ Double.

BARIUM (ARC SPECTRUM).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
6675·30	0·20	1	6677·0 Huggins	absent	1·96	4·4	14976·2
6595·55	0·10	1	6589·0 ,,	,,	1·94	4·5	15157·2
6527·56	0·10	4	6526·0 Thalén	6527·48	1·92	,,	15315·1
6498·93	0·10	4		absent	1·91	,,	15382·6
6497·07	0·10	6r	6495·3 ,,	6497·12	,,	,,	15387·0
6483·10	0·10	4	6483·0 ,,	6483·06	1·90	,,	15420·2
6451·05	0·10	4	6449·3 ,,	absent	,,	,,	15496·8
6341·88	0·10	4	6343·3 ,,	,,	1·86	4·6	15763·6
6141·93	0·03	10r	6140·5 ,,	6141·96	1·81	4·8	16276·4
6111·01	0·03	6	6109·8 ,,	absent	1·80	,,	16359·1
6083·63	0·15	1		,,	1·79	,,	16432·7
6063·33	0·03	6	6062·0 ,,	,,	1·78	,,	16487·8
6019·69	0·03	6	6018·2 ,,	6019·60	1·77	4·9	16607·2
5997·31	0·03	4	5991·7 ,,	absent	,,	,,	16669·2
5978·72	0·20	1		5978·76	1·76	,,	16721·1
5971·94	0·03	8	5971·2 ,,	absent	,,	,,	16740·1
5965·06	0·20	2	5971·2 ,,	5965·15	,,	,,	16759·4
5907·88	0·05	6	5904·7 ,,	absent	1·74	5·0	16921·5
5853·91	0·10	10r	5852·7 ,,	5853·90	1·73	,,	17077·6
5826·50	0·03	8r	5827·1 ,,	absent	1·71	5·1	17157·9
5819·21	0·05	4n		,,	,,	,,	17179·4
5805·86	0·05	6r	5803·6 ,,	5805·85	,,	,,	17218·9
5800·48	0·05	6r		absent	,,	,,	17234·8
5784·24	0·15	2n		5784·26	,,	,,	17283·3

BARIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
5777·84	0·03	10r	5779·6 Thalén	absent	1·70	5·1	17302·4
5721·66	0·30	1n		,,	1·69	5·2	17472·3
5713·62	0·15	$4b^v$		,,	,,	,,	17496·8
‡5709·82	0·15	$4b^v$		5709·75	,,	,,	17508·5
5680·34	0·05	6r		5680·48	1·68	,,	17599·4
5620·41	0·50	2n		5620·30	1·66	5·3	17787·0
5593·45	0·10	4n		absent	1·65	,,	17872·7
5535·69	0·05	10r	5534·2 ,,	5535·74	1·64	,,	18059·3
5519·37	0·05	8r	5518·4 ,,	absent	1·63	,,	18112·7
5473·94	0·10	4n			1·62	5·4	18263·0
5437·66	0·10	2n	5436·0 ,,	5474·10	1·61	,,	18384·9
5424·82	0·05	8r	5425·0 ,, 5424·0 ,,	5424·86	1·60	,,	18428·4
‡5393·47	0·10	$1b^v$			1·59	5·5	18535·4
5381·25	0·50	$1b^v$		5381·25	,,	,,	18577·5
5379·05	0·00	$1b^v$			,,	,,	18585·1
5365·46	0·50	$1b^v$			,,	,,	18632·2
5309·20	0·30	$2b^v$			1·57	5·6	18829·6
5305·99	0·20	$2b^v$		5306·05	,,	,,	18841·0
5302·97	0·20	$4b^v$			,,	,,	18852·2
5294·40	0·10	2			,,	,,	18882·3
5291·16	0·20	1n			,,	,,	18893·8
5279·72	0·20	1n			1·56	,,	18934·8
5277·84	0·15	4n			,,	,,	18941·5
5267·20	0·10	6n			,,	,,	18979·8
5253·94	0·10	1n			,,	,,	19027·7
5177·60	0·05	2n			1·53	5·7	19308·3
5175·74	0·05	4n			,,	,,	19315·2
5160·27	0·10	4n			,,	,,	19373·1
5055·12	0·10	2n			1·50	5·9	19392·3
4947·50	0·10	2n			1·47	6·0	20206·2
4934·24	0·03	10r	4933·3 ,,	4934·26	1·46	,,	20260·5
4903·11	0·05	$6b^v$			1·45	,,	20389·2
4900·13	0·05	8	4899·4 ,,	4900·07	,,	,,	20401·6
4877·99	0·15	2n			,,	6·1	20494·1
4726·63	0·05	8r	4727·0 Huggins		1·40	6·3	21150·4
4724·98	0·10	2			,,	,,	21157·8
4700·64	0·05	$6b^v$		4700·70	,,	,,	21267·4
‡4691·74	0·03	6r	4690·0 ,,	4691·75	1·39	,,	21307·7
4673·69	0·05	$6b^r$			,,	6·4	21390·0
4642·38	0·10	$1b^v$		4642·40	1·38	,,	21534·3
4636·80	0·10	$2b^v$			,,	,,	21560·2
4628·45	0·05	$4b^r$			,,	,,	21599·1
4620·19	0·05	$4b^v$			1·37	,,	21637·7
4605·11	0·05	$2b^r$		4605·20	,,	6·5	21708·5
4600·02	0·05	$4b^v$	4599·1 Thalén	4600·02	,,	,,	21732·5
4591·88	0·05	$2b^r$			,,	,,	21771·1
4589·82	0·05	$2b^r$			1·36	,,	21780·9
4579·84	0·03	8r			,,	,,	21828·3
4574·08	0·05	6r			,,	,,	21855·8
4554·21	0·03	10r	4553·4 ,,	4554·22	1·35	,,	21951·2
‡4525·19	0·05	6	4524·4 ,,	4525·15	,,	6·6	22091·9
4523·48	0·10	6r		4253·58	,,	,,	22100·3
4506·11	0·10	6			1·34	,,	22185·5
4493·82	0·20	$4b^r$	4493·0 Lockyer	4493·73	,,	,,	22246·2

BARIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
4489·50	0·50	4b[r]	4488·0 Lockyer		1·34	6·6	22267·6
4467·36	0·05	4			1·33	6·7	22377·9
4432·13	0·03	6r	4433·0 ,,	4432·30	1·32	,,	22555·8
4413·96	0·05	2		4414·03	,,	,,	22648·7
4407·10	0·05	4b[v]			1·31	,,	22684·0
4402·75	0·05	8r	4401·5 ,,		,,	6·8	22706·3
4359·80	0·05	2		4359·80	1·30	,,	22930·0
4350·49	0·10	8r	4351·0 ,,		,,	6·9	22979·0
4333·04	0·05	4n	4332·0 ,,	4333·06	1·29	,,	23071·6
4325·38	0·05	2	4325·0 ,,		,,	,,	23112·5
4323·15	0·05	4b[r]	4323·0 ,,	4323·15	,,	,,	23124·4
4291·32	0·05	4	4290·6 ,,	4291·30	1·28	7·0	23295·8
4283·27	0·03	8r	4282·5 ,,		,,	,,	23339·6
4264·45	0·05	4n	4264·0 ,,	4264·45	1·27	,,	23442·7
4242·83	0·05	4b[v]	4241·5 ,,	4242·80	,,	,,	23562·2
‡4239·91	0·05	2b[v]	4239·0 ,,	4239·90	,,	,,	23578·4
‡4224·11	0·05	4	4224·0 ,,		1·26	7·1	23666·5
4179·57	0·20	2b[v]		4179·55	1·25	,,	23918·8
4166·24	0·05	4	4165·5 ,,	4166·20	,,	,,	23995·4
‡4132·60	0·05	2	4131·5 ,,	4132·58	1·24	7·2	24190·6
4130·88	0·05	8r	4130·5 ,,	4130·77	,,	,,	24200·7
4110·46	0·10	2		4110·42	1·23	7·3	24320·8
4087·90	0·50	1n	4087·0 ,,	4087·96	1·22	,,	24455·1
‡4085·35	0·50	1n	4084·0 ,,	4085·46	,,	,,	24470·4
4079·56	0·50	1n	4081·0 ,,	4079·58	,,	,,	24505·1
‡3995·92	0·10	6	3995·0 ,,	3995·93	1·20	7·5	25018·0
3993·60	0·03	10r	3992·7 ,,	absent	,,	,,	25032·6
3975·55	0·10	2		3975·50	1·19	7·6	25146·2
3938·09	0·05	6	3937·2 ,,	3938·15	1·18	,,	25385·4
‡3935·87	0·05	8r	3934·7 ,,	3935·95	,,	,,	25399·7
‡3917·42	0·05	4		3917·45	,,	7·7	25519·3
3910·04	0·05	8r	3908·5 L. & D.	3910·06	,,	,,	25567·4
3906·20	0·05	2		absent	1·17	,,	25592·6
3900·54	0·05	4n		,,	,,	,,	25649·8
‡3892·93	0·10	2n		,,	,,	,,	25679·8
3891·97	0·05	6n	3891·0 ,,	3891·95	,,	,,	25686·2
3889·45	0·05	4		?	,,	,,	25702·9
3861·87	0·15	2n		?	,,	,,	24886·5
3794·77	0·20	2n	3793·5 ,,	3793·78	1·14	7·9	26344·2
3701·87	0·15	2n		3701·83	1·12	8·2	27005·2
3689·28	0·15	2n		3689·24	1·11	,,	27097·4
3664·76	0·10	2n		3664·79	,,	8·3	27278·6
3662·62	0·05	6	3660·7 ,,	absent	,,	,,	27293·6
3637·10	0·50	1n		3637·16	1·10	,,	27486·1
3611·17	0·10	6b[v]		3611·18	1·09	8·4	27683·4
3599·60	0·05	6	3598·7 ,,	absent	,,	,,	27772·5
3593·58	0·15	4b[v]	3592·8 ,,	?	,,	,,	27819·0
3588·33	0·10	2n		3588·40	,,	8·5	27859·7
3586·64	0·10	2		3586·68	,,	,,	27872·7
3579·97	0·10	4nr	3579·1 ,,	3579·97	1·08	,,	27924·7
3577·79	0·05	4n		absent	,,	,,	27941·7
3576·20	0·16	1		,,	,,	,,	27944·1
3566·90	0·05	2n		,,	,,	,,	28027·0
3562·23	0·10	1n		3562·25	,,	,,	28063·8
3548·14	0·05	2n		3548·15	1·07	8·6	28175·2

BARIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Fraunhofer Lines in Rowland's Map	Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda+$	$\frac{1}{\lambda}-$	
3544·94	0·10	6nr	3544·0	absent	1·07	8·6	28200·6
3525·23	0·10	6nr	3524·5	3525·22	,,	,,	28358·3
3501·29	0·05	10r	3499·2	3501·20	1·06	8·7	28552·2
3420·48	0·10	4r	3419·3	absent	1·04	8·9	29226·8
3377·19	0·10	4rb^v	3375·6	3377·29	1·03	9·0	29601·4
3357·00	0·10	6rb^v	3354·8	absent	1·02	9·1	29779·4
3323·06	0·10	4b^v	3320·9	3322·95	1·01	9·2	30383·6
3315·90	0·10	2n		absent	,,	,,	30148·5
‡3298·25	0·10	4b^v		3298 25	,,	9·3	30009·8
3281·96	0·10	4b^v	3279·8	3281·97	1·00	,,	30451·0
‡3262·57	0·10	2b^v	3261·0		,,	9·4	30641·3
3223·11	0·20	1n			0·98	9·5	31016·4
3204·09	0·20	1n			,,	,,	31200·6
3184·45	0·30	1n			0·97	9·6	31393·0
‡3119·48	0·50	1n			0·95	9·8	32046·8
3108·37	0·50	2n			,,	,,	32161·4
3071·71	0·03	6r	3070·3		0·94	10·0	32545·2
2785·22	0·15	8n	2785·1		0·87	11·2	35892·6
2771·51	0·10	6	2771·0		0·86	,,	36070·2
2702·78	0·03	4r	2702·0		0·84	11·5	36987·4
2647·41	0·05	4	2647·0		0·83	11·8	37760·9
2641·52	0·05	4			,,	,,	37845·2
2634·91	0·05	8	2634·5		0·82	11·9	37940·1
2596·89	0·05	4r	2596·7		0·81	12·1	38495·5
2347·67	0·05	6	2347·0		0·75	13·6	42581·8
2335·33	0·05	8r	2335·0		0·74	,,	42807·0
2304·32	0·05	8r	304·5		0·73	13·8	43383·0
2254·80	0·10	4			0·72	14·1	44535·7
2245·72	0·10	4			,,	14·2	44515·0
2216·64	0·10	1			0·70	14·3	45099·0

‡ See Iron.

MERCURY (ARC SPECTRUM).

Kayser and Rünge ('Ueber die Spectren der Elemente,' Pt. IV. Berlin, 1891).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda+$	$\frac{1}{\lambda}-$	
5819·05	0·50	1n	5817 Huggins	1·72	5·1	17179·8
5804·28	0·30	2b^v	5800 ,,	1·71	,,	17223·6
5790·49	0·20	10r	5789·6 Thalén	,,	,,	17264·6
5769·45	0·20	10r	5768·1 ,,	1·70	,,	17327·6
5460·97	0·05	10r 3†	5460·6 ,,	1·61	5·4	18366·4
5365·25	1·00	1n	5364·6 ,,	1·59	5·5	18633·0
4959·74	0·50	2b^v	4958·6 ,,	1·47	6·0	20156·3
4916·41	0·10	6b^v	4916·1 ,,	1·46	,,	20334·0
4358·56	0·03	10r 3†	‡4358·1 ,,	1·30	6·8	22936·6
4347·65	0·10	6b^v	‡4348·0 Hartley & Adeney	,,	6·9	22994·0
4339·47	0·10	4b^v	4341·0 ,,	1·29	,,	24037·4

MERCURY (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	$\frac{1}{\lambda}$−	
4078·05	0·03	8r 3†	‡4077·5 Hartley & Adeney	1·22	7·3	24514·2
4046·78	0·03	6r	‡4046·5 „	1·21	7·4	24703·6
§3984·08	0·05	4	3984·0 „	1·20	7·6	25092·3
3908·4	2·00	1n	3910·0 Vogel	1·17	7·7	25578·2
§3820·6	0·50	1n	3820·0 Hartley & Adeney	1·15	7·9	26166·0
§3790·36	0·50	2n	3790·0 „	1·14	„	26374·8
3770·71	0·50	2n	3770·0 „	„	8·0	26512·2
3751·83	0·05	4n	3751·0 „	1·13	„	26645·7
3680·74	0·20	4b^{v}	3681·9 „	1·11	8·2	27160·4
3663·25	0·05	6r 4*	‡3662·9 „	„	8·3	27289·9
3654·94	0·05	6r	‡3654·4 „	1·10	„	27351·9
3650·31	0·03	10r	‡	„	„	27386·6
3561·53	0·10	4n	3560·1 „	1·08	8·6	28069·2
3543·65	0·10	4n	3542·3 „	1·07	„	28210·9
3390·50	0·50	6n	3389·5 „	1 03	9·0	29485·2
3367·03	0·50	1n	3365·5 „	„	9·1	29690·7
3351·52	0·10	4b^{r}	3351·2 „	1·02	„	29828·1
3341·70	0·05	6b^{v} 4†	3341·2 „	„	„	29915·8
3305·23	0·20	1b^{v}		1·01	9·2	30245·9
3264·33	0·20	1		1·00	9·4	30624·8
§3144·61	0·10	2b^{v}		0·96	9·7	31790·7
3135·89	0·20	2n		„	9·8	31879·1
3131·94	0·03	8r	3130·4 „	„	„	31919·3
3131·68	0·03	8r 4*		„	„	31921·9
§3125·78	0·05	10r	3124·5 „	„	„	31982·2
3095·35	0·20	1n	3094·0 „	0·95	9·9	32296·6
3085·41	1·00	1n		0·94	„	32400·7
3050·58	0·50	1n		0·93	10·0	32770·6
3038·69	0·15	4b^{v}		„	10·1	32898·8
3027·62	0·15	2b^{v}		„	„	33019·1
3023·71	0·20	2n 5*		„	„	33061·8
3021·64	0·05	4r	3021·0 „	„	„	33084·5
3011·17	0·25	1n		0·92	10·2	33199·5
3007·02	0·15	2b^{r}		„	„	33245·3
2967·37	0·10	10r 4*	2966·4 „	0·91	10·4	33689·5
§2925·51	0·10	8b^{v} 5†	2925·2 „	0·90	10·6	34171·5
2893·67	0·05	6b^{v} 4†	2892·9 „	„	10·7	34547·5
2865·14	0·25	1n		0·89	10·8	34891·5
2857·07	0·10	4b^{v}		„	„	34990·1
2847·85	0·10	4n	2846·8 „	0·88	10·9	35103·3
2835·26	0·25	1n	2832·1 „	„	„	35259·2
2819·97	0·10	4n	2819·7 „	0·87	11·0	35450·4
§2803·69	0·20	4b^{v} 6*	2804·5 „	„	11·1	35656·2
2799·76	0·20	1	2798·5 „	„	„	35706·3
§2774·68	0·20	4n	2773·2 „	0·86	11·2	36029·0
§2759·83	0·05	6 6†	2760·8 „	„	11·3	36222·8
2752·91	0·03	8b^{v} 4†	2751·5 „	„	„	36313·9
2699·74	0·40	2n 7*	2702·0 „	0·84	11·6	37029·0
2686·61	0·20	2n		„	„	37210·0
2675·20	0·20	2n 7†		„	11·7	37368·7
2672·77	0·20	1n		0·83	„	37402·7
2660·26	0·20	1n		„	„	37578·6
2658·59	0·20	1n	„	„	„	37602·2
2655·29	0·03	6r	2657·6 „	„	11·8	37648·9
2653·89	0·05	6r 5*	‡2652·2 „	„	„	37668·7

MERCURY (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2652·20	0·05	8r	‡	0·83	11·8	37682·7
2648·12	0·20	1n		,,	,,	37750·8
2642·70	0·10	6b^{r}	2644·6 Hartley & Adeney	,,	,,	37828·3
2609·73	0·20	1n		0·82	12·0	38306·1
2605·29	0·10	2n	2602·3 ,,	,,	,,	38371·4
§2576·31	0·10	8b^{v} 5†	2575·3 ,,	0·81	12·2	38803·0
2564·14	0·10	1		0·80	,,	38987·2
2540·39	0·10	2r		,,	12·4	39351·6
2536·72	0·20	10rb	2535·8 ,,	,,	,,	39408·6
2534·89	0·05	8r 5*	2533·8 ,,	,,	,,	39437·0
2524·80	0·10	2b^{v}	2522·7 ,,	0·79	12·5	39594·6
2505·00	0·50	1n		,,	12·6	39907·6
2482·14	0·20	4n 6*	2484·2 ,,	0·78	12·7	40274·1
2478·09	0·50	2n	2477·7 ,,	,,	,,	40341·0
2464·15	0·05	6b^{v} 5†	2463·7 ,,	,,	12·8	40569·1
2446·96	0·10	6b^{v} 6†		0·77	12·9	40854·1
2412·31	0·10	4b^{v}		0·76	13·2	41440·8
2399·64	0·20	4n 7*		,,	,,	41659·7
2378·40	0·15	6b^{v} 6*		0·75	13·3	42031·8
2374·10	0·50	2n		,,	13·4	42107·8
2345·41	0·05	4b^{v} 6†	2342·2 ,,	,,	13·6	42622·9
2301·57	1·00	1b^{v} 7*		0·73	13·9	43434·7
2262·23	0·15	4	2263·3 ,,	0·72	14·1	44190·1
2260·36	0·15	4	2261·4 ,,	,,	,,	44226·6
2252·87	0·15	2	2254·0 ,,	,,	14·2	44373·6
2224·73	0·20	4	2225·7 ,,	0·71	14·3	44935·0

The lines marked * form a series of triplets for which in the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, $a = 40159·60$ for the *first* line, 44792·87 for the *second*, and 46560·78 for the *third*, $b = 127484$, $c = 1252695$. For the triplets marked † $a = 40217·98$, or 44851·01, or 46618·44, $b = 126361$, $c = 613268$.

‡ Ames (Rowland's scale) (*Phil. Mag.*, July 1890), 4451·09, 4358·50, 4347·71, 4077·98, 4046·67, 3663·41, 3663·03, 3654·96, 3650·28, 2653·80, 2652·15. § See Iron.

BROMINE (ABSORPTION).

Hasselberg, 'Kongl. Svenska Vetenskaps-Akademiens Handlingar,' Bandet 24, No. 3, 1891.

* Double. † Triple.

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
			6158·79	4	16232·1
			6158·09	7	16234·0
Group 6162–6142			6157·30	5	16236·1
6161·97	4	16223·8	6157·06		16236·7
6160·64	5	16227·3	6156·78	5	16237·5
6160·00	3	16229·0	6156·55		16238·1
6159·69	3	16229·8	6156·25	4	16238·8
6159·34	4	16230·7	6155·73	4	16240·2
6159·03	2	16231·5	6155·45	7	16241·0

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6154·92	3	16242·4
6154·58	3	16243·3
6154·19	6	16244·3
6153·36	3	16246·5
6153·00	5	16247·4
6152·64	4	16248·4
6152·39	3	16249·0
6151·96	5	16250·2
6151·68		16250·9
6151·27	4	16252·0
6151·04		16252·6
6150·57	6n	16253·8
6149·89	3	16255·6
6149·53	4⊙	16256·6
6149·29	4	16257·2
6148·96	2	16258·1
6148·64	2	16259·0
6148·36	2	16259·7
6148·15	6⊙	16260·2
6147·36	2	16262·3
6147·11	5	16263·0
6146·76	2	16263·9
6146·23	3	16265·3
6145·97	4n	16266·0
6144·91	4	16268·8
6144·25		16270·6
6143·81	4n b	16271·7
6143·53	3n	16272·5
6143·19	3n b	16273·4
6142·84	5n	16274·3

Group 6142–6122

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6141·37	4	16278·2
6141·09	2	16278·9
6140·81	3	16279·7
6140·48	2	16279·6
6140·16	3	16281·4
6139·84	4	16282·3
6139·56	3	16283·0
6139·16	2	16284·1
6138·84	4	16284·9
6138·55	2	16285·7
6138·24	2	16286·5
6137·64	2	16287·1
6136·42	2	16291·3
6136·11	4	16292·2
6135·70*	3	16293·3
6135·21	4	16294·6
6134·78	4	16295·7
6134·37	4	16296·8
6133·98	4	16297·8
6133·53		16299·0
6133·13	3	16300·1
6132·73	4	16301·2
6132·34	4	16302·2
6131·92	3	16303·3
6131·59	4	16304·2
6131·19	3	16305·2
6130·78	3	16306·3
6130·41	4	16307·3
6130·08	3	16308·2
6129·69	4	16309·2
6129·31	3	16310·2
6128·97	3	16311·2
6128·52	3	16312·4
6128·22	4	16313·1
6127·86	3	16314·1
6127·59	3	16314·8
6127·40	2	16315·3
6127·21	2	16315·8
6126·96	3	16316·5
6126·73	2	16317·1
6126·51	3	16317·7
6126·21	4	16318·5
6125·69	4	16319·9
6125·36	2	16320·8
6125·12	6	16321·4
6124·54	5	16323·0
6124·01	6	16324·4
6123·50	5	16325·7
6123·02	5	16327·0

Group 6122–6103

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6122·47	⊙	16328·5
6122·00	0	16329·7
6121·60	4	16330·8
6121·15	4	16332·0
6120·77	4	16333·0
6120·57	2	16333·5
6120·14	2	16334·7
6119·97	2	16335·1
6119·66	3	16336·0
6119·36	3	16336·8
6119·09	4	16337·5
6118·77	3	16338·3
6118·45	3	16339·2
6118·10*	3	16340·1
6117·61	7	16341·4
6117·23	4	16342·5
6116·47	6⊙ b	16344·5
6115·67	4	16346·6
6115·26	n	16347·7
6114·80		16349·0
6114·37		16350·1
6114·05	5n	16351·0
6113·44	5n	16352·7
6112·70	5	16354·6
6112·47		16355·2
6112·17	2 b	16356·0
6111·90	4	16356·7

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6111·36	4	16358·2
6111·13	5	16358·8
6110·84	2 b	16359·6
6110·51	4	16360·4
6109·76	5	16362·4
6109·45	2 b	16363·3
6109·16	4	16363·1
6108·49	6⊙	16365·9
6108·18	2	16366·7
6107·90	4	16367·4
6107·44	2	16368·7
6107·22	4s	16369·3
6106·95	3s	16370·0
6106·62*	3	16370·9
6106·27	3	16371·8
6105·95	4	16372·7
6005·61	3	16373·6
6005·34	3	16374·3
6005·06	4b	16375·1
6004·37	(4 lines)	16376·9
6004·02	3	16377·8
6003·57	4	16378·0
Group 6103–6079		
6103·24	3	16379·9
6102·76	2	16381·2
6102·04	5	16383·2
6101·61	3	16384·3
6101·26	4	16385·3
6100·92	3	16386·2
6100·64	4	16386·9
6100·21	5n	16388·1
6099·77	4	16389·3
6099·47	3n	16390·1
6099·12	4n	16391·0
6098·74	5	16392·0
6098·33	4	16393·1
6097·97	4b	16394·1
6097·21	(3 or 4 lines)	16396·1
6096·48	4	16398·1
6095·95	3	16399·5
6095·74	3	16400·1
6095·50	3	16400·7
6095·04	3b	16402·0
6094·70	4	16402·9
6094·51		16403·4
6094·01	4	16404·7
6093·70	3	16405·6
6093·46	2	16406·2
6093·22	4	16406·9
6092·76	2	16408·1
6092·50	2	16408·8
6092·25	3	16409·5
6092·01	3	16410·1
6091·78	3	16410·8
6091·52	3	16411·5

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6091·30	2	16412·1
6091·08	3	16412·6
6090·81	2	16413·4
6090·58	5	16414·0
6090·15	2	16415·2
6089·83*	5	16416·0
6089·31	4	16417·4
6088·79	3	16418·8
6088·53	3	16419·5
6088·12	5	16420·6
6087·56	2	16422·1
6087·26	3	16422·9
6087·01	2	16423·6
6086·79	4	16424·2
6086·39		16425·3
6086·20	4	16425·8
6085·92	2	16426·6
6085·57	6	16427·5
6085·32	3	16428·2
6085·02	4s	16429·0
6084·78	4s	16429·6
6084·54	2	16430·3
6084·31	4s	16430·6
6084·07	4	16431·6
6083·75	4	16432·4
6083·20	8	16433·9
6082·50*	6	16435·8
6082·03	4	16437·1
6081·75	5	16437·8
6081·52	4	16438·5
6081·10	4	16439·6
6080·93	5	16440·0
6080·36	7	16441·6
6079·78	6	16443·2
6079·11	5	16445·0
Group 6079–6066		
6078·54	5	16446·5
6078·32		16447·1
6077·85	6	16448·4
6077·49	2	16449·4
6077·23	6	16450·1
6076·83	3	16451·1
6076·42	3	16452·3
6076·14	3	16453·0
6075·67	4	16454·3
6075·39	4	16454·9
6075·06*	4	16455·8
6074·73	4	16456·7
6074·39	4	16457·7
6074·12	4	16458·4
6073·86	3	16459·1
6073·44	5	16460·2
6073·08	4	16461·2
6072·72	4	16462·3
6072·35	4	16463·2

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6071·96	3	16464·2
6071·65	3	16465·1
6071·31	5	16466·0
6070·95	2	16467·0
6070·68	3	16467·7
6070·47	5	16468·3
6070·14	3	16469·2
6069·61	6n	16470·6
6069·02	2	16472·2
6068·75	4	16473·0
6068·50	3	16473·6
6067·75	5	16475·7
6067·19	3	16477·2
6066·86	4	16478·1
6066·41	3	16479·3
6066·07	5s	16480·2
Group 6066–6042		
6065·29	5	16482·4
6064·96	3	16483·3
6064·50	6	16484·5
6063·62	5	16486·9
6062·85	4	16489·0
6062·39	3	16490·2
6062·13	4	16491·0
6061·88	4	16491·6
6061·52*	4	16492·6
6061·22	3	16493·4
6060·70	4s	16494·8
6060·32	3	16495·9
6059·97	3	16496·8
6059·64	2	16497·7
6059·36	3	16498·5
6059·05	3	16499·3
6058·72	4s	16500·2
6058·38	2	16501·2
6058·11	2	16501·9
6057·80	3	16502·7
6057·49	3	16503·6
6057·09	4	16504·7
6056·86	4	16505·3
6055·95	6	16507·8
6055·76	6	16508·3
6055·22	6	16509·8
6054·78	6	16511·0
6054·25	6	16512·4
6054·04	3	16513·0
6053·74	4	16513·8
6053·34 }	5	16514·9
6052·70 }		16516·6
6052·47	5	16517·3
6052·12	4	16518·2
6051·82	4	16519·0
6051·37	5	16520·3
6051·01	4	16521·3
6050·74	4	16521·0
6050·41	5	16522·9
6049·97	4	16524·1
6049·73	4	16524·7
6049·42	4	16525·6
6049·13	3	16526·4
6048·76	5	16527·4
6048·43	4	16528·3
6048·10	3	16529·2
6047·80	4	16530·0
6047·42	4	16531·1
6047·09	4	16532·0
6046·75	4	16532·9
6046·46	5	16533·7
6046·14	2	16534·7
6045·82	4	16535·4
6045·55 }	4	16536·2
6045·15 }		16537·3
6044·91	3	16537·9
6044·58	4	16538·8
6044·31	3	16539·6
6044·00	4	16540·4
6043·66	3	16541·4
6043·38	3	16542·1
6043·05	4	16543·0
6042·69	2	16544·0
Group 6042–6003		
6042·20 }	4	16545·4
6041·79 }		16546·5
6041·54	3	16547·2
6041·28	4	16547·9
6040·96	2	16548·8
6040·56	4	16549·9
6040·16	4	16550·9
6039·74	5	16552·1
6039·42	5	16553·0
6038·97	4	16554·2
6038·60	4	16555·2
6038·16	5	16556·4
6037·86	5	16557·3
6037·43	4	16558·4
6037·09	4	16559·4
6036·70	5	16560·4
6036·36	5	16561·4
6035·91	4	16562·6
6035·53	4	16563·6
6035·22	4	16564·5
6034·88	3	16565·4
6034·55	3	16566·3
6034·29	4	16567·0
6033·94	3	16568·0
6033·71	3	16568·6
6033·52	3	16569·2
6033·26	3	16569·9
6033·01	2	16570·6
6032·75	2	16571·3

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6032·49	4	16572·0	6007·25	2	16641·6
6032·13	4	16573·0	6007·00	4b	16642·3
6031·88	4	16573·7	6006·81		16642·9
6031·33	4	16575·2	6006·53	5b	16643·6
6030·95	4n	16576·2	6006·34		16644·2
6030·25	3	16578·2	6006·07	4	16644·9
6029·87*	5	16579·2	6005·83	4	16645·6
6029·47	3	16580·3	6005·61	4	16646·2
6029·17	5	16581·1	6005·32	4	16647·0
6028·72		16582·4	6005·10	4	16647·6
6028·22	3	16583·7	6004·84	4	16648·3
6027·67	4	16585·3	6004·60	2	16649·0
6027·08	3	16586·9	6004·35	4	16649·7
6026·79	4	16587·7	6004·00	4	16650·7
6026·52	2	16588·4	6003·66	4	16651·6
6026·15	2	16589·4			
6025·80	5n	16590·4	Group 6003–5977		
6025·19	2	16592·1			
6024·90	5	16592·9	6003·28	4	16652·7
6024·72		16593·4	6002·70	3	16654·3
6023·87	5	16595·7	6002·38	3	16655·2
6022·93	5	16598·3	6002·11	2	16655·9
6022·43	2	16599·7	6001·83*	3	16656·7
6022·00	6	16600·9	6001·47	3	16657·7
6021·58	3	16602·0	6000·97	3	16659·1
6021·02	6n	16603·6	6000·55*	2	16660·2
6020·15	6n	16606·0	6000·00	3	16661·8
6019·69	3	16607·3	5999·61	4	16662·8
6019·41	5	16608·0	5999·15*	2	16664·1
6018·92		16609·4	5998·72	3	16665·3
6018·66	4	16610·1	5998·29	3	16666·5
6018·40	6	16610·8	5997·94*	4	16667·5
6017·73	6n	16612·7	5997·42	3	16668·9
6017·18	6b	16614·2	5997·05	3	16670·0
6016·56		16615·9	5996·72*	4	16670·9
6015·97	4	16617·5	5996·30*	4	16672·0
6015·60	3	16618·5	5995·88	3	16673·2
6015·27	4	16619·4	5995·50	3	16874·3
6014·64	3b	16621·2	5995·11	5	16675·4
6014·45	3b	16621·7	5994·63	4	16676·7
6014·15	4b	16622·6	5994·24	4	16677·8
6013·46	6	16624·5	5993·86	4	16678·8
6013·00	5b	16625·7	5993·54	4	16679·7
6012·36	5b	16627·5	5993·10	4b	16680·9
6011·98	3	16628·5	5992·60	4n	16682·3
6011·73	5	16625·9	5992·12	4n	16683·7
6011·28	6	16630·5	5991·63	5n	16685·0
6011·02		16631·2	5991·18	4	16686·3
6010·47	5b	16632·7	5990·88	3	16687·1
6010·10	2	16633·8	5990·57	4	16688·0
6009·80	4	16634·6	5990·23	3	16688·9
6009·50	2	16635·4	5989·92	3	16689·8
6009·23	4s	16636·2	5989·59	3	16690·7
6008·61	4	16637·9	5989·32	3	16691·5
6008·26	6	16638·8	5989·00	4	16692·4
6008·03	6	16639·5	5988·64	2	16693·4
6007·56	4	16640·8	5988·43	2	16693·0

Bromine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5988·17	3	16694·7
5987·64	3	16696·2
5987·15	3	16697·5
5986·91	3	16698·2
5986·67	3	16698·9
5986·16	3	16700·3
5985·95	4	16700·9
5985·36	(4 lines)	16702·5
5984·79	4	16704·1
5984·50	3	16704·9
5984·31	2	16705·5
5983·67	3	16707·2
5983·37	4	16708·1
5982·98	2	16709·2
5982·65	6	16710·1
5982·34	6	16711·0
5981·55	6	16713·2
5981·30	6	16713·9
5980·59	5	16715·9
5980 25	6	16716·8
5979·62	4b	16718·6
5979·18		16719·8
5978·84	4	16720·7
5978·55		16721·6
5978·33	4	16722·2
5978·12		16722·7
5977·61	3	16724·2
5977·34	3	16724·9
Group 5977–5949		
5976·88	2	16726·2
5976·67	2	16726·8
5976·41	3	16727·5
5976·17	3	16728·2
5975·95	2	16728·8
5975·44	4	16730·3
5975·18	4	16731·0
5974·89	4	16731·8
5974·62	4	16732·6
5974·34	4	16733·3
5973·95	3	16734·4
5973·67	4	16735·2
5973·15	3	16736·7
5972·81	4	16737·6
5972·52	2	16738·4
5971·97	4	16740·0
5971·64	3	16740·9
5971·22	4	16742·1
5970·86	2	16743·1
5970·45	4s	16744·2
5970·09	2	16745·3
5969·68	4s	16746·4
5969·41	2	16747·2
5968·92	4s	16748·5
5968·18	3s	16750·6
5967·66	4	16752·1

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5967·42	4	16752·8
5967·00	4 $\odot$	16753·9
5966·72	4	16754·7
5966·29	6b $\odot$	16755·9
		16756·7
5965·62	4	16757·8
5965·41		16758·4
5964·97	6	16759·6
5964·35	6	16761·4
5962·95*	5	16765·2
5962·39	5	16766·9
5962·02	5	16767·9
5961·44	6	16769·6
5961·06	6	16770·6
5960·54	6b	16772·1
5960·16	6	16773·2
5959·61	5	16774·7
5959·22	6	16775·8
5958·61	5	16777·5
5958·32	6	16778·4
5957·82	5	16779·8
5957·46	5	16780·8
5956·84	5	16782 5
5956·38	3	16783·8
5956·03	4n	16784·8
5955·50	4	16786·3
5955·16	4	16787·3
5954·94	3	16787·9
5954·52	4	16789·1
5954·23	3	16789·9
5954·00	2	16790·5
5953·74	4	16791·3
5953·47	4	16792·0
5953·13*	4	16793·0
5952·24	3s	16795·5
5951·97	4s	16796·3
5951·61	2	16797·3
5951·24	4s	16798·3
5950·90	2	16799·3
5950·61	3	16800·1
5950·41	3	16800·7
5950·16	2	16801·4
5949·96	2	16801·9
5949·82	2	16802·3
5949·61	4s	16802·9
5949·27	2	16803·9
Group 5949–5935		
5948·67	4	16805·6
5948·18*	5b	16806·0
5947·53	4	16808·8
5947·24	2	16809·5
5946·95	3	16810·4
5946·64	2	16811·3
5946·40	3	16811·0
5946·09	3	16812·9

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5945·82	5	16813·6
5945·07*	4	16815·8
5944·59	5	16817·1
5943·92	5	16819·0
5943·42	5	16820·4
5943·00	4	16821·6
5942·73	6	16822·3
5942·28	5	16823·6
5941·98	4	16824·4
5941·67	5	16825·3
5941·14	5	16826·8
5940·78	2	16827·8
5940·54	4	16828·5
5940·02	4	16827·5
5939·60	3	16831·1
5939·26	5	16832·1
5938·90	5	16833·1
5938·49	3	16834·3
5938·22	4	16835·1
5937·91	4	16835·9
5937·52	4	16837·0
5937·22	4	16837·9
5936·87	4	16838·9
5936·65		16839·5
5936·20	4	16840·8
5935·87	4	16841·7
5935·58	3	16842·5
5935·23	4	16843·5
Group 5935	–5896 (D_1)	
5934·60	2	16845·3
5934·26	4	16846·3
5933·92	4	16847·3
5933·64	2	16848·1
5933·36	5	16848·9
5933·04	5	16849·8
5932·74	3	16850·6
5932·43	5	16851·5
5932·05	4	16852·6
5931·83	4	16853·2
5931·55	4	16854·0
5931·10	4	16855·3
5930·78	3	16856·2
5930·53	4	16856·9
5930·22	4	16857·8
5929·33	6	16860·3
5928·88	3	16861·6
5928·60	4	16862·4
5928·03	4	16864·0
5927·74	3	16864·8
5927·46	2	16865·6
5927·15	5 b	16866·5
5926·72	4	16867·7
5926·42	5	16868·6
5926·10	5	16869·5
5925·63	5	16870·8
5925·32	5	16871·7

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5924·98	4	16872·7
5924·62	6	16873·7
5924·23	8	16874·8
5924·00	8	16875·5
5923·49	3	16876·9
5923·20	4	16877·8
5923·01	2	16878·3
5922·80	4	16878·9
5922·51	3	16879·7
5922·11	5	16880·9
5921·76	2	16881·9
5921·44	4	16882·8
5921·17	5	16883·5
5920·86	2	16884·4
5920·64	4	16885·1
5920·03	4	16886·8
5919·69	3	16887·8
5919·40	4	16888·6
5919·09	3	16889·5
5918·79	4	16889·3
5918·54	4	16891·1
5918·33	2	16891·7
5918·07*	4	16892·4
5917·73	3	16893·4
5917·52	4	16894·0
5917·29	3	16894·6
5917·08	3	16895·2
5916·85	3	16895·9
5916·60	5	16896·6
5916·36	4	16897·3
5916·13	3	16897·9
5915·92	4	16898·5
5915·57	3 b	16899·5
5915·32	4	16900·2
5915·06	2	16901·0
5914·86	4	16901·6
5914·47	?	16902·7
5914·17	2	16903·5
5913·88*	3	16904·4
5913·47	4	16905·5
5913·21		16906·3
5912·96	3	16907·0
5912·53	3	16908·2
5912·31	2	16908·9
5912·00	3	16909·7
5911·81	3 b	16910·3
5911·01		16912·6
5910·74	2	16913·3
5910·48	3	16914·1
5910·21	2	16914·9
5909·95	2	16915·6
5909·79	2	16916·1
5909·54	2	16916·8
5909·24	2	16917·6
5908·91	2	16918·6
5908·59	2	16919·5
5908·29	2	16920·4

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5907·94	4	16921·4	5888·37	2	16977·6
5907·68	4	16922·1	5888·10	4	16978·4
5907·38	2	16923·0	5887·81	2	16979·2
5907·09	2	16923·8	5887·53	3	16980·0
5906·75	4	16924·8	5887·27	3	16980·8
5906·13*	8	16926·6	5887·00	5	16981·6
5905·73	2	16927·7	5886·59	3	16982·8
5905·50	4	16928·4	5886·12	4	16984·1
5905·22	2	16929·2	5885·81	3	16985·0
5904·94	5s	16930·0	5885·45	4	16986·0
5904·36	6	16931·6	5885·04	5	16987·2
5904·02	3	16932·6	5884·66	3	16988·3
5903·69	6	16933·6	5884·30	4	16989·4
5903·11	4n	16935·2	5883·90	4	16990·5
5902·73	4	16936·3	5883·54	4	16991·6
5902·44	4	16937·1	5883·13	4	16992·7
5902·13	4	16938·0	5882·78	3	16993·8
5901·82	5⊙	16938·9	5882·36*	5	16995·0
5901·43	4	16940·0	5882·04	4	16995·9
5901·12	2	16940·9	5881·63	4	16997·1
5900·75	3	16942·0	5881·34	4	16997·9
5900·31	4	16943·3	5880·96	4	16999·0
5899·93	2	16944·3	5880·71	3†	16999·7
5899·66	4s	16945·1	5880·33		17000·8
5899·31	4	16946·1	5880·08	3	17001·6
5898·45*	6	16948·6	5879·77*	3	17002·5
5898·06	5	16949·7	5879·44	5s	17003·4
5897·83	4	16950·4	5879·09	4	17004·4
5897·50	5	16951·3	5878·75	4	17005·4
5897·10	5	16952·5	5878·46	4	17006·3
5896·78	5	16953·4	5878·18	4	17007·1
			5877·89	4	17007·9
Group 5896 (D_1)–5862			5877·60	4	17008·7
			5877·12	4	17010·1
5895·95	3	16955·8	5876·81	3	17011·0
5895·68	3	16956·6	5876·52	4	17011·9
5895·34	3	16957·5	5876·27	4	17012·6
5895·01	4	16958·5	5876·01	4	17013·3
5894·61	3	16959·6	5875·74	4	17014·1
5894·37	3	16960·3	5875·47	4	17014·9
5894·11	2	16961·1	5875·26	3	17015·5
5893·86	3	16961·8	5875·10	3	17016·0
5893·62	3	16962·5	5874·87	4	17016·7
5893·37	3	16963·2	5874·62	3	17017·4
5892·95	2	16964·4	5874·37	2	17018·1
5892·71	3	16965·1	5874·14	4 b	17018·8
5892·34	4	16966·2	5873·56	5	17020·4
5891·98	4	16967·2	5873·00	4	17022·1
5891·43*	4	16968·8	5872·71	3	17022·9
5891·04	3	16969·9	5872·52	3	17023·5
5890·81	2	16970·6	5872·31	3	17024·1
5890·57	3	16971·3	5872·09	3	17024·7
5889·64	4	16974·0	5871·90	2	17025·3
5889·15	4	16975·4	5871·65	4	17026·0
5889·00	3	16975·8	5871·19*	4	17027·3
5888·74	3	16976·6	5870·83	3	17028·4
5888·56	3	16977·1	5870·53	3	17029·2

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5870·23	2	17030·1	5849·46	3	17090·6
5869·91	7s	17031·0	5849·17	4	17091·4
5869·46	4	17032·3	5848·83	5	17092·4
5868·93	3	17033·9	5848·55	4	17093·2
5868·58*	5	17034·9	5847·90	4	17095·1
5868·17	4	17036·1	5847·67	2	17095·8
5867·87	2	17037·0	5847·40 }	4	17096·6
5867·59	3	17037·8	5847·18 }		17097·2
5867·37	3 } b	17038·4	5846·93	2	17098·0
5866·75	3 } b	17040·2	5846·59	5	17099·0
5866·00	4	17042·4	5846·34	6	17099·7
5865·72	4	17043·2	5846·06	2	17100·5
5865·41	2	17044·1	5845·82	4	17101·2
5865·08	3	17045·1	5845·52	5	17102·1
5864·83	4	17045·8	5845·23	?	17103·0
5864·57	3	17046·5	5844·78	6	17104·3
5864·27	3	17047·4	5844·50	2	17105·1
5863·95	3	17048·3	5844·22	5	17105·9
5863·66	3	17049·2	5843·93	4	17106·8
5863·31	4	17050·2	5843·44	6	17108·2
5863·03	1	17051·0	5843·10	5	17109·2
			5842·82	3	17110·0
			5842·58	3	17110·7
Group 5862	–5832		5842·39	2	17111·3
			5842·12	3	17112·1
5862·38	4	17052·9	5841·81	4	17113·0
5862·11	4	17053·7	5841·60	2	17113·6
5861·59	3	17055·0	5841·34	2	17114·4
5861·30	3	17056·1	5841·08	4	17115·1
5861·05	3	17056·8	5840·86	3	17115·8
5860·76	3	17057·6	5840·66	3	17116·4
5860·52	3	17058·3	5840·46	4	17116·9
5860·23	3	17059·2	5840·06	3	17118·1
5859·57	2	17061·1	5839·73	3	17119·1
5859·37	2	17061·7	5839·44	3	17119·9
5859·11	3 } b	17062·4	8539·19	3	17120·7
5858·41	3 } b	17064·5	5838·81	6	17121·8
5857·38*	3	17067·5	5838·61	3	17122·4
5856·97	4	17068·7	5838·16	7	17123·7
5856·60	3	17069·7	5837·59	7	17125·3
5856·35	4	17070·5	5837·16	3	17126·6
5855·51	4s	17072·9	5836·95	6	17127·2
5855·36	3s	17073·4	5836·41	7b	17128·8
5854·95*	6	17074·6	5835·92	4	17130·1
5854·52	3	17075·8	5835·66	2	17130·9
5854·00	4⊙	17077·3	5835·44	2	17130·6
5853·43	5	17079·0	5835·15	4	17132·4
5852·90	5	17080·5	5834·89	3	17133·2
5852·56	4⊙	17081·5	5834·56	2	17134·1
5851·90	4	17083·5	5834·20*	4	17135·2
5851·59	3	17084·4	5833·80	5	17136·4
5851·32	4	17085·2	5833·49	4	17137·3
5851·03	2	17086·0	5833·25	2	17138·0
5850·75	5	17086·8	5833·00	3	17138·7
5850·41	3	17087·8	5832·75	2	17139·5
5850·07	4	17088·8	5832·43	6	17140·4
5849·74	5	17089·8	5832·18	2	17140·9

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
Group 5832–5807		
5831·60	3	17142·9
5831·37	4	17143·5
5831·09		17144·3
5830·89	4	17144·9
5830·53	3	17146·0
5830·22*	4	17147·9
5829·85	4s	17148·0
5829·59	4s	17148·8
5828·60	6n	17151·7
5827·69	3	17154·3
5827·42	2	17155·1
5827·13	3	17156·0
5826·71	2	17157·2
5826·43	2	17158·1
5826·19	4	17158·8
5825·98	2	17159·4
5825·74	3	17160·1
5825·28	3	17161·5
5825·04	3	17162·2
5824·77	3	17163·0
5824·27	3	17164·4
5823·88	4	17165·6
5823·56	3	17166·5
5823·34	4	17167·2
5823·10	2	17167·9
5822·91	4b	17168·4
5822·42		17169·9
5822·04	2	17171·0
5821·81	2	17171·7
5821·56	3	17173·4
5821·38	2	17173·0
5820·96	3	17174·2
5820·73	3	17175·9
5820·48	3	17175·6
5820·24	3	17176·3
5819·81	3	17177·6
5819·42	3	17178·7
5819·20	3	17179·4
5818·67	3	17181·0
5818·33	3	17182·0
5818·14	3	17182·5
5817·90	5 lines	17183·2
5817·07		17185·7
5816·26	4n	17188·1
5815·82*	3	17189·4
5815·52	2	17190·3
5815·14	4	17191·4
5814·76	3	17192·5
5814·34	4	17193·7
5814·12	2	17194·4
5813·77*	4	17195·4
5813·43	2	17196·4
5813·16	4	17197·2
5812·71	3	17198·6
5812·41	7n	17199·5
5812·18*	6	17200·1
5811·79	3	17201·3
5811·54	4	17202·0
5811·16	3	17203·2
5810·92	3	17203·9
5810·62	5	17204·8
5810·37	4	17205·5
5809·84	5	17207·1
5809·57	6⊙	17207·9
5809·23	2	17208·9
5808·87*	6	17209·9
5808·45	3	17211·2
5808·15	6	17212·1
5807·95	6	17212·7
5807·54	3	17213·9
5807·35	4	17214·5
Group 5807–5791		
5806·83	2	17216·0
5806·60	4	17216·7
5806·38	4	17217·3
5806·02*	3n	17218·4
5805·60	4	17219·6
5805·36	4	17220·4
5805·10	3	17221·1
5804·91	3	17221·7
5804·60	3	17222·6
5804·35	2	17223·4
5804·08	3	17224·2
5803·87	2	17224·8
5803·64	4	17225·5
5803·29	4	17226·5
5802·82	6	17228·9
5802·26	8	17229·6
5801·88	2	17230·7
5801·54	5	17231·7
5800·93	8	17233·5
5800·58	3	17234·6
5800·35	4	17235·2
5800·12	2	17235·9
5799·77	5	17237·0
5799·51	3	17237·7
5799·23	4	17238·6
5798·75	4	17240·0
5798·48	4	17240·8
5798·15	7	17241·8
5797·77	2	17242·9
5797·30*	5b	17244·3
5796·81	7	17245·8
5796·43	4	17246·9
5796·19	3	17247·6
5795·95	4	17248·3
5795·64	6	17249·2
5795·44	7	17249·8
5795·23	3	17250·5
5794·94	4	17251·3

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5794·57	4	17252·4
5794·23	5	17253·4
5794·04	3	17254·0
5793·77	3	17254·8
5793·41	3⊙	17255·9
5793·13	3	17256·7
5792·92	4	17257·3
5792·74	4	17257·9
5792·44	4	17258·8
5792·09	3	17259·8
5791·65	4	17261·1
Group 5791–5763		
5791·04	3	17262·9
5790·81	4	17263·5
5790·46	4	17264·7
5790·19	3	17265·5
5789·77*	2	17266·7
5789·23	3	17268·3
5789·04	2	17269·9
5788·86	2	17269·5
5788·36	4	17270·9
5788·04	4	17271·9
5787·76	4	17272·7
5787·34	4	17274·0
5786·84	5	17275·5
5786·40	4bn	17276·8
5785·79	5	17278·6
5785·28*	4	17280·1
5784·82	3	17281·5
5784·65	3	17282·0
5784·13	?⊙	17283·6
5783·84	2	17284·4
5783·54	4	17285·3
5783·12	3	17286·6
5782·83	3	17287·5
5782·46	6s	17288·6
5782·01	6s	17290·9
5781·64	2	17291·0
5781·46	3	17291·6
5781·13	3s	17292·2
5780·97	3	17293·0
5780·64	3	17294·0
5780·38	4	17294·8
5780·19	3	17295·4
5779·76		17296·7
5779·43	4s	17297·6
5779·10	4s	17298·6
5778·74	4	17299·7
5778·47	3	17300·5
5778·21	4	17301·3
5777·73*	3	17302·7
5777·39	6	17303·7
5776·98	3	17305·0
5776·50	5	17306·4
5776·20	3	17307·3
5775·88	4	17308·3
5775·57	4	17309·2
5774·75	7	17311·7
5774·43	3	17312·6
5773·90	7	17314·2
5773·36	4	17315·8
5773·02	6s	17316·9
5772·72	4	17317·8
5772·11	5s	17319·6
5771·59	4	17321·1
5771·29	7	17322·0
5770·86	3	17323·3
5770·56	4	17324·2
5770·19	4	17325·3
5769·89	4	17326·2
5769·65	3	17327·0
5769·40	2	17327·7
5769·06	4	17328·7
5768·81	4	17329·5
5768·55	4	17330·3
5768·33	4	17330·9
5768·00	4	17331·9
5767·53	5	17333·3
5767·16	5	17334·4
5766·91	5	17335·2
5766·67	2	17335·9
5766·50	3	17336·4
5766·24	4	17337·2
5765·71	7	17338·8
5765·03	6	17340·9
5764·42	8	17342·7
5764·13	3	17343·6
5763·78	4	17349·6
Group 5763–5742		
5763·00	4	17347·0
5762·70	5	17347·9
5762·23	4	17349·3
5761·94	4	17350·2
5761·70	4	17350·9
5761·28	4n	17352·1
5760·83	4	17353·5
5760·33	6	17355·0
5759·88	3	17356·4
5759·64		17357·1
5759·21	5 b	17358·4
5758·89	5	17359·4
5758·56	4	17360·3
5758·21	4	17361·4
5757·71	5 b	17362·9
5757·32	3	17364·1
5757·03	5	17365·0
5756·65	5	17366·1
5756·33	5	17367·1

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5756·01	3	17368·0
5755·80	3 b	17368·7
5755·56	2	17369·4
5755·36	3	17370·0
5755·14	3	17370·7
5754·59	3b	17372·3
5754·26	5	17373·3
5753·91	5	17374·4
5753·12	3	17376·8
5752·84	3	17377·6
5752·58	4	17378·4
5752·35	3	17379·1
5751·83	4	17380·7
5751·49	3	17381·7
5751·30	2	17382·3
5751·00	2	17383·2
5750·78	5	17383·8
5750·49	3	17384·7
5750·27	3	17385·4
5749·69	5	17387·1
5749·43	4	17387·9
5749·20	4	17388·6
5748·89	2	17389·6
5748·57	7	17390·5
5747·55	7	17393·6
5747·19	2	17394·7
5746·95	2	17395·4
5746·70	3	17396·2
5746·46	4s	17396·1
5746·10*	3	17398·0
5745·76*	3	17399·0
2745·45	4s	17400·0
5745·23	3	17400·6
5744·85	4	17401·8
5744·46	8	17403·0
5744·11	2 b	17404·0
5743·70	4	17405·3
5743·48	4s	17405·9
5743·24	2	17406·7
5743·07	2	17407·2
5742·80	4s	17408·0
5742·54	6	17408·8
Group 5742–5712		
5741·89	4	17410·7
5741·63	5	17411·5
5741·32	3	17412·5
5741·08	3	17413·2
5740·74	5	17414·3
5740·45	2	17415·1
5739·81	8	17417·1
5739·41	3	17418·3
5739·14	2	17419·1
5738·91	6	17419·8
5738·58	4	17420·8
5738·32	3	17421·6
5738·11	7	17422·2
5737·89	2	17422·9
5737·60	2	17423·8
5737·25	6	17424·8
5736·81	4	17426·2
5736·49*	7	17427·2
5736·14	2	17428·2
5735·92	2	17429·9
5735·70	4	17429·6
5735·45	4	17430·3
5735·18	3	17431·1
5734·97	4	17431·8
5734·71	4	17432·6
5734·26	4	17433·9
5733·97	b	17434·8
5733·57*	5	17436·0
5733·16*	3	17437·3
5732·82	4	17438·3
5732·62	3	17438·9
5732·44	3	17439·5
5732·19	5	17440·2
5731·56	5	17442·0
5731·28	2	17442·9
5730·97	8	17443·9
5730·28	5	17446·0
5729·69	8b	17447·7
5729·16	5	17449·4
5728·87	3	17450·2
5728·56	5	17451·2
5728·17	4	17452·4
5727·87	3	17453·3
5727·63	8b	17454·0
5726·98		17456·0
5726·71	5	17456·8
5726·45	2	17457·6
5726·14*	6	17458·6
5725·79	6	17459·6
5725·54	6	17460·4
5725·07*	3	17461·8
5724·77	5	17461·7
5724·43	5	17463·8
5724·13	4	17464·7
5723·81	5	17465·6
5723·52	4	17466·6
5723·19*	3	17467·6
5722·80*	2	17468·8
5722·50	3	17469·7
5722·28	4	17470·3
5722·09	5	17470·9
5721·61	3	17472·4
5721·33	3s	17473·2
5721·12	3s	17473·9
5720·86	2	17474·6
5720·47	4	17475·8
5720·22	2	17476·5
5719·97	3	17477·4
5719·33	2b	17479·4

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5718·84	4	17480·8
5718·67	4	17481·3
5717·73	4	17484·3
5717·45	3	17485·1
5717·19	3	17485·9
5717·02	4	17486·4
5716·75	2	17487·2
5716·59	4	17487·7
5716·39	2	17488·4
5716·09	3	17489·3
5715·70	3	17490·5
5715·38	6⊙	17491·4
5714·94	3	17492·8
5714·49	5	17493·2
5714·20	2	17495·1
5713·64	5	17496·8
5713·35	4	17497·7
5713·00	2	17498·7
5712·73	2	17499·5
5712·44	6⊙	17500·4
5712·18	7⊙	17501·2
Group 5712	–5688	
5711·69	2	17502·7
5711·38	6⊙	17503·6
5710·42	5n	17506·6
5709·37	5	17509·8
5708·95	2	17511·1
5708·60*	5	17512·2
5708·40	2	17512·8
5707·94	2	17514·2
5707·64	5	17515·1
5707·28	3	17516·3
5706·71*	4	17518·1
5705·79	5s⊙	17520·8
5705·35	3	17522·4
5704·97	4	17523·4
5704·40	2	17525·1
5704·12	4	17525·9
5703·94	4	17526·5
5703·33	5	17528·4
5702·86	2	17529·8
5702·53	7	17530·8
5701·83	6	17533·0
5701·05	5	17535·3
5700·79	2	17536·2
5790·49	4s	17537·1
5790·13	2	17538·3
5699·79	3	17539·3
5699·44	2	17540·3
5699·23	4	17541·0
5698·62	7	17543·0
5698·19	3	17544·2
5697·91	4	17545·1
5697·29	6	17547·0
5696·73	5	17548·7
5696·45	2	17549·6
5696·24	4	17550·2
5695·81	5	17551·6
5695·66	5	17552·0
5695·05	4b	17553·9
5694·73	2	17554·9
5694·48	4	17555·6
5694·25	2	17556·3
5693·89	6s	17557·5
5693·28	5	17559·4
5692·91	3	17560·5
5692·58	4	17561·5
5692·24	2	17562·6
5691·94	5	17563·5
5691·57	4	17564·6
5691·31	3	17565·4
5691·10	3	17566·1
5690·70*	5⊙	17567·3
5690·38	2	17568·3
5690·05	5	17569·3
5689·68	4	17570·5
5689·39	3	17571·4
5689·14	2	17572·1
5688·84	2	17573·0
Group 5688	–5659	
5688·11	4	17575·3
5687·88	2	17576·0
5687·60	2	17576·9
5687·27	4	17577·9
5686·96	4 } b	17578·9
5686·44	3 }	17580·5
5686·13	3	17581·4
5686·76	4	17582·6
5685·45	2	17583·5
5685·14	2	17584·5
5684·82	4⊙	17585·5
5684·52	4⊙	17586·4
5683·98	2	17588·1
5683·68	3	17589·0
5683·99	4	17591·9
5682·38	4	17593·1
5681·93	2	17594·5
5681·64	2	17595·5
5681·26	4	17596·5
5680·90	2	17592·8
5680·57	2	17593·9
5680·14	5	17605·2
5679·93	3	17605·8
5679·66	2	17601·5
5679·05	5	17603·4
5678·68	2	17604·5
5678·33	2	17605·6
5678·02	6	17606·6
5677·71	2	17607·5
5677·26	3	17608·9

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5676·93	6	17609·9
5676·31	4	17611·9
5676·00	4	17612·8
5675·39	4	17614·7
5645·06	4	17615·8
5674·81	3	17616·5
5674·52	2	17617·4
5674·06	3	17618·9
5673·78	3	17619·7
5673·45	3	17620·8
5673·14	3	17621·8
5672·73	4	17622·0
5672·46	2	17623·9
5672·20	3	17624·6
5671·96	5	17625·4
5671·65	2	17626·4
5671·22*	5	17627·7
5670·88	3	17628·8
5670·42	5	17630·2
5669·95	3	17631·7
5669·57	4	17632·8
5669·26	3	17633·8
5669·05	3	17634·4
5668·75	4	17635·4
5668·49	3	17636·2
5667·97	7	17638·8
5667·20	7	17640·2
5666·46	7	17642·5
5666·06	2	17643·7
5665·68	4	17645·9
5665·38	4	17646·9
5664·89	5	17647·4
5664·63	3	17648·2
5664·31 }	6	17649·2
5664·06 }		17650·0
5663·52	6	17651·7
5662·89	3	17653·7
5662·59	4	17654·6
5662·23	4	17655·7
5661·85	3	17656·9
5661·58	4	17657·7
5661·31 }	b (3 lines)	17658·5
5660·79 }		17660·2
5660·47	4	17661·2
5660·22	3	17662·0
5659·82	5	17663·2
5659·37	6	17664·6
Group 5659–5616		
5658·90	4	17666·1
5658·62	4	17667·0
5658·25	4	17668·1
5657·86	4	17669·3
5657·45	6	17670·6
5656·93	6	17672·2
5656·44	5	17673·7
5656·10	2	17674·8
5655·80	4	17675·8
5655·39	4	17677·0
5654·80	3	17678·9
5654·44	3	17680·0
5654·14	4	17680·9
5653·60	3	17682·6
5653·16	4	17683·9
5652·91	4	17684·8
5652·56	4	17685·9
5651·91	4	17687·9
5651·68	2	17688·6
5651·39	2	17689·6
5651·04	4	17690·6
5650·76	5	17691·5
5650·00	3	17693·9
5649·66	5	17695·0
5649·17	3	17696·5
5648·81	2	17697·6
5648·59	5	17698·3
5648·27	2	17699·3
5647·88	4	17700·6
5647·46	6	17701·9
5647·04	3	17703·2
5646·42	6	17705·1
5646·15	3	17705·9
5645·54	3	17707·9
5645·28	4	17708·7
5645·00	2	17709·6
5644·77	2	17710·3
5644·30	5⊙	17711·7
5643·58	3	17714·0
5643·20	4	17715·2
5642·84	3	17716·4
5642·57	3	17717·2
5642·17*	4	17718·5
5641·73	3⊙	17719·9
5641·28	3⊙	17721·3
5640·91	3	17722·4
5640·38	3	17724·1
5640·05	4	17725·1
5639·45	4	17727·0
5639·05	3	17728·3
5638·26 }	4	17730·8
5637·98 }		17731·6
5637·58*	5	17732·9
5637·14	2	17733·3
5636·78	5s	17735·4
5636·25	3	17737·1
5635·95	4s	17738·0
5635·68	2	17738·9
5635·17	5	17740·5
5634·81	2	17741·6
5634·43	7	17743·8
5633·80	4	17744·8
5633·55	4	17745·6
5633·09	3	17746·6

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5632·78	5s	17748·0
5632·36*	4	17749·3
5632·02	5s	17750·4
5631·72	3	17751·4
5631·37	4s	17752·5
5631·13	4	17753·2
5630·87	2	17754·0
5630·63	5	17754·8
5630·30	2	17755·8
5630·00	4s	17756·8
5629·70	4s	17757·7
5629·39	4	17758·7
5628·96	2	17760·1
5628·69	4	17760·9
5628·41	2	17761·8
5628·14	4	17762·6
5627·88	2	17763·5
5627·49	5	17764·7
5626·96	5	17766·4
5626·43	4	17768·1
5626·13	2	17769·0
5625·91	4	17769·7
5625·72		17770·3
5625·40	4	17771·3
5625·12	2	17772·2
5624·60	5 †	17773·8
5624·29	4	17774·8
5624·00	4	17775·7
5623·60	3	17777·0
5623·40	3	17777·6
5623·19	3	17778·3
5622·90	3	17779·2
5622·48	4	17780·5
5622·16	3	17781·5
5621·90	4	17782·3
5621·49	3	17783·6
5621·24	2	17784·5
5621·03	4	17785·0
5620·83	3	17785·6
5620·59	2	17786·4
5620·35	2	17787·2
5620·00	5	17788·3
5619·65	5	17789·4
5619·23	4	17790·7
5618·70	4	17792·4
5618·29	2	17793·7
5617·61	6	17795·9
5617·06	3	17797·6
5616·68	4	17798·8
5616·27	2	17800·1
Group 5616–5587		
5615·38	4	17803·0
5614·85	2	17804·6
5614·54	3	17805·6
5614·29	3	17806·4
5614·00	3	17807·3
5613·51	4	17809·9
5613·21	3	17809·8
5612·82	3	17811·0
5612·46	4	17812·2
5612·19	4	17813·0
5611·83	2	17814·1
5611·48	3	17815·3
5611·21	3	17816·2
5610·91	3	17817·1
5610·74	3	17817·7
5610·46	3	17818·5
5610·22	3	17819·3
5609·94	3	17820·2
5609·69	3	17821·0
5609·33	3	17822·1
5608·86		17823·7
5608·54	2	17824·7
5608·22	4	17825·7
5607·95	4	17826·5
5607·63	3s	17827·5
5607·17	3s	17829·0
5606·72	3s	17830·4
5606·28*	3s	17831·8
5605·98	2	17832·8
5605·70*	3s	17833·7
5605·21	4	17835·2
5604·79	5	17836·6
5604·39	3	17837·9
5604·11	5	17838·7
5603·27	6	17841·4
5602·84	3	17842·8
5602·44	6	17844·1
5601·90	3	17845·8
5601·60	5⊙	17846·7
5601·29	4	17847·7
5600·89	5	17849·0
5600·56	4	17850·0
5600·26	2	17851·0
5600·04	5	17851·7
5599·60	2	17853·1
5599·33	4	17854·0
5598·70*	6⊙	17856·0
5598·18	4	17857·6
5597·90	b	17858·5
5597·42		17860·1
5597·14	4	17861·0
5596·94	5	17861·6
5596·57	6	17863·8
5596·17	6	17864·1
5595·69	7	17865·6
5595·17	6	17867·3
5594·47	5	17869·5
5594·00	5	17871·0
5593·65	5	17872·1
5593·17	4	17873·7
5592·68	8	17875·2

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5592·24	4	17876·6
5591·90	4	17877·7
5591·56	4	17878·8
5591·10	5s	17880·3
5590·71	5	17881·5
5590·38	4⊙	17882·6
5590·16	4	17883·3
5589·84	4	17884·3
5589·49*	5	17885·4
5589·05	4	17886·6
5588·63	3	17888·2
5588·40	3	17888·9
5588·16	3	17889·7
5587·83	3	17890·8
5587·54	3	17891·7
5587·31	4	17892·4
Group 5587	–5555	
5586·74	2	17894·3
5586·46	2	17895·1
5586·15	5	17896·1
5585·81	5	17897·2
5585·48	2	17898·3
5585·09	4	17899·5
5584·67	3	17900·9
5584·41	2	17901·7
5584·00	4	17903·0
5583·64	3	17904·2
5583·31	3	17905·2
5582·94	5	17906·4
5582·62	3	17907·4
5581·90	4	17909·8
5581·63	4	17910·6
5581·39	4	17911·4
5581·00	2	17912·6
5580·70	4	17913·6
5580·39	2	17914·6
5580·08	3	17915·6
5579·60*	4 b	17917·1
5579·25	2	17918·3
5578·65	4	17920·2
5578·30	2	17921·3
5578·07	2	17922·0
5577·79	3	17923·0
5577·47	3	17924·0
5577·18	2	17924·9
5576·93	3	17925·7
5576·74	2	17926·3
5575·99	4	17928·8
5575·49	4	17930·4
5575·19	2	17931·3
5574·89	3	17932·3
5574·57	4s	17933·3
5574·32	3	17934·1
5573·63	7	17936·3
5572·93	6	17938·6

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5572·73	6	17939·2
5572·21	4	17940·9
5571·95	3	17941·8
5571·72	2	17942·5
5571·49	4	17943·2
5571·16	3	17944·3
5570·90	4	17945·1
5570·67	2	17945·9
5570·47		17946·5
5569·90	6b	17948·4
5569·56		17949·5
5569·16*	5	17950·7
5568·83	3	17951·8
5568·41	5	17953·2
5568·11	5	17954·1
5567·57	4⊙	17955·9
5567·36	4	17956·5
5567·08	3	17957·4
5566·75	6	17958·5
5566·33		17959·9
5565·97	7	17961·1
5565·52	5	17962·5
5565·26	3	17963·3
5565·00	3	17964·1
5564·70	5	17965·1
5564·33	4	17966·3
5563·90	6⊙	17967·7
5563·49	4	17969·0
5563·00	7⊙	17970·6
5562·44	5	17972·5
5562·20	2	17973·2
5561·97	3	17974·0
5561·75	5	17974·7
5561·35	6	17975·9
5561·00	4	17977·1
5560·72	3	17978·0
5560·44	7	17978·9
5560·16	6	17979·8
5559·86	6	17980·8
5559·53*	5	17981·9
5559·20	2	17982·9
5558·82	4	17984·2
5558·53	3	17985·1
5558·05	4	17986·6
5557·42	8	17988·7
5556·93	8	17990·3
5556·39	8	17992·0
5556·03	6	17993·1
5555·86	6	17993·8
5555·55	3	17994·8
Group 5555	–5528	
5555·02	2	17996·4
5554·82	3	17997·1
5554·50	3	17998·1
5554·14	4	17999·3

Bromine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5553·86	4⊙	18000·2	5536·19	3	18057·7
5553·53*	4	18001·3	5535·88	4	18058·7
5553·09*	4	18002·7	5535·47*	4	18060·0
5552·65	4	18004·1	5535·04*	5	18061·4
5552·39	2	18005·0	5534·72	2	18062·4
5552·22	4	18005·5	5534·50	5	18063·2
5551·94	3	18006·4	5534·31	5	18063·8
5551·72	4	18007·1	5533·86	5	18065·3
5551·23	4	18008·7	5533·67	2	18065·9
5550·83	4	18010·0	5533·43*	3	18066·7
5550·47	4	18011·2	5533·06	4⊙	18067·9
5550·25	4	18011·9	5532·76	4	18068·8
5549·87	5	18013·1	5532·46	2	18069·8
5549·62	2	18014·0	5532·24	4	18070·6
5549·47	2	18014·5	5532·00	2	18071·3
5549·32	3	18014·9	5531·68	4	18072·4
5548·95	5s	18016·1	5531·40	4	18073·3
5548·72	3	18016·9	5531·15	5	18074·1
5548·45	3	18017·8	5530·65	6	18075·7
5548·14*	4	18018·8	5530·37	2	18076·7
5547·81	2	18019·8	5530·08	5	18077·6
5547·54	4s	18020·7	5529·44	5	18079·7
5547·36	2	18021·3	5529·20	2	18080·5
5547·14*	4	18022·0	5529·02	2	18081·1
5546·64	4	18023·6			
5546·33	4	18024·6	Group 5528–5502		
5546·06	3	18025·5			
5545·81	4	18026·3	5528·39	3	18083·1
5545·46	4	18027·5	5528·10	2	18084·1
5545·11*	2	18028·6	5527·87	4	18084·8
5544·78*	5	18029·7	5527·61	4	18085·7
5544·45	2	18030·8	5527·34	2	18086·6
5543·97	5	18032·3	5526·82	3	18088·3
5543·71	2	18033·2	5526·55	4	18089·2
5543·44	5s⊙	18034·0	5526·35		18089·8
5543·16		18034·9	5526·05	2	18090·8
5542·74	5	18035·3	5525·80	3⊙	18091·6
5542·34	3	18037·6	5525·53	2	18092·5
5542·08	6	18038·5	5525·30	3	18093·3
5541·71	2	18039·7	5525·04	3	18094·1
5541·52	2	18040·3	5524·85	3	18094·8
5541·20	5	18041·3	5524·62	3	18095·5
5540·99	5	18042·0	5524·32	3	18096·5
5540·72	3	18042·9	5524·10	3	18097·2
5540·28	4s b	18044·3	5523·84	3	18098·0
5539·94		18045·5	5523·63	2 b	18098·7
5539·58	4	18046·6	5523·38	2	18099·5
5539·29	5s	18047·6	5522·98	4s	18100·9
5538·98	2	18048·6	5522·45	2	18102·6
5538·78	4⊙	18049·2	5522·10	5	18103·7
5538·43	4	18050·4	5521·78	3	18104·8
5537·83		18052·3	5521·15	4	18106·8
5537·50	4	18053·4	5520·73	4s	18107·1
5537·24	3	18054·2	5520·53	2	18108·8
5536·92	4	18055·3	5520·32	4s	18109·5
5536·70	3	18056·0	5520·04	3	18110·4
5536·43	2	18056·9	5519·80	3	18111·2

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5519·40	3	18112·5	5499·50	4	18188·1
5518·95	4	18114·0	5499·21	3	18189·0
5518·63	3	18115·0	5499·05	2	18189·6
5518·23	3	18116·4	5498·85	3	18190·2
5518·03	3	18117·0	5498·60	6	18191·1
5517·58	2	18118·5	5498·23	3	18192·3
5517·33	2	18119·3	5497·60	2	18194·3
5517·03	5	18120·6	5497·32	4	18195·3
5516·67	4	18121·7	5497·00	2	18196·3
5516·22	5	18123·0	5496·75	2	18197·2
5515·89	5	18124·0	5496·41	6s	18198·3
5515·49	3	18125·4	5496·01	5	18199·6
5515·17	3	18136·4	5495·53	5	18201·2
5514·91	4 ⊙	18137·3	5495·25	2	18202·1
5514·70		18137·9	5494·95	5	18203·1
5514·14	3	18139·8	5494·69	2	18204·0
5513·73	3	18141·1	5494·47	2	18205·7
5513·48	2	18142·0	5494·12	5	18205·9
5513·13	5	18143·1	5493·78	5	18207·0
5512·82	5	18144·1	5493·55	5	18207·8
5512·43	4	18145·4	5493·28	4s	18208·7
5512·15	4	18146·3	5492·98	4	18209·7
5511·65	4*	18148·0	5491·98	7	18213·0
5511·29	5	18149·2	5491·36		18215·0
5511·03	4	18150·0	5490·97	5	18216·3
5510·69	2	18151·1	5490·66	4	18207·4
5510·35	4	18152·3	5490·34	5	18208·4
5509·87	4	18153·8	5489·92	4	18209·8
5509·62	3	18154·7	5489·67	2	18210·6
5509·39	4	18155·4	5489·42	4	18211·5
5509·12	4	18156·3	5489·13	4	18212·4
5508·84	4	18157·2	5488·77	3s	18213·6
5508·67	3	18157·8	5488·42	5	18214·8
5508·45	3	18158·5	5487·88	2	18216·6
5508·21	3	18159·3	5487·53	4	18217·8
5507·91	5s	18160·3	5487·22	3	18218·8
5507·59	4*	18161·4	5486·87	4	18219·9
5506·88	7	18163·7	5486·65	2	18220·7
5506·36		18165·4	5486·46	2	18221·3
5505·98	2	18166·7	5486·22	2	18222·1
5505·75	5	18167·4	5486·04	4	18222·7
5505·40	4	18168·6	5485·73	4	18223·7
5505·11	4*	18169·5	5485·45	3	18224·6
5504·72	6*	18170·8	5485·19	6	18225·5
5504·31	5*	18172·2	5484·93		18226·4
5503·90	2	18173·5	5484·54	5	18227·7
5503·62	6	18174·4	5483·92	5	18229·7
5503·23	3	18175·7	5483·70	4	18230·5
5502·13	5s	18179·4	5483·35	3	18231·6
			5483·01	3	18232·7
Group 5502–5477			5482·70	6	18233·8
			5482·53		18234·4
5501·46	4	18181·6	5482·17	6*	18235·6
5501·13	5	18182·7	5481·41	5	18238·1
5500·58	6	18184·5	5481·11	5	18239·1
5500·34	3	18185·3	5480·78	3	18240·2
5499·97	4	18186·5	5480·52	3	18241·1

BROMINE (ABSORPTION)—*continued.*

Wave-length	Character and Intensity	Oscillation Frequency in Vacuo
5480·25	5	18242·0
5479·89	3	18243·2
5479·32	6	18245·0
5478·96	8	18246·3
5478·48	3	18247·9
5478·18	3	18248·9
5477·89	3	18249·8
5477·65	2	18250·6
5477·15	4	18252·3
Group 5477	–5456	
5476·42	4	18254·7
5476·10	4	18255·8
5475·91	4	18256·4
5475·69	2	18257·1
5475·23	5	18258·7
5474·91	4	18259·7
5474·62	4	18260·7
5474·24	4⊙	18261·0
5473·90	4	18263·1
5473·67	4	18263·9
5473·48	4	18264·5
5473·26	3	18265·2
5472·98	5	18266·2
5472·69	4	18267·1
5472·33	3	18268·3
5472·04	5s	18269·3
5471·73	3	18270·3
5471·43	5	18271·3
5470·99	3⊙	18272·8
5470·76	3	18273·6
5470·39	5*	18274·8
5470·04	4	18276·0
5469·72	4	18277·1
5469·45	4	18278·0
5468·94	6	18279·7
5468·68	2	18280·5
5468·49	2	18281·2
5468·32	2	18281·7
5468·13	3	18282·4
5467·90	2	18283·1
5467·65	2	18284·0
5467·24	6	18285·4
5466·84		18286·7
5466·71	8⊙?	18287·1
5466·29		18288·4
5465·87	5	18289·9
5465·59	3	18290·9
5465·29	2	18291·9
5464·96	6	18293·0
5464·62	3	18294·1
5464·46	3	18294·7
5464·25	3s	18295·4
5464·05	2	18296·0
5463·84	2	18296·8
5463·17	4	18299·0

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5462·87	5	18300·0
5462·58	5	18301·0
5462·31	4	18301·9
5461·81	7	18303·5
5461·42	5	18304·8
5461·20	5	18305·6
5460·74	6	18307·2
5460·19	7	18309·0
5459·67	4*	18310·7
5459·19	5	18312·3
5458·79	3	18313·7
5458·60	3	18314·3
5458·29	2	18315·4
5457·97	5	18316·4
5457·53	3	18317·9
5457·15	7	18319·2
5456·89	7	18320·1
5456·54	3	18321·2
5456·27	2	18322·1
5456·03	4	18322·9
Group 5456	–5430	
5455·62	6	18324·3
5455·28	2	18325·5
5455·08	5	18326·1
5454·84	5	18327·0
5454·64	3	18327·6
5454·12	4	18329·4
5453·84	4	18330·3
5453·10	4*	18332·8
5452·76	5s	18333·9
5452·50	3	18334·8
5452·23	4	18335·7
5451·85	5	18337·0
5451·34	5	18338·7
5451·05	4	18339·7
5450·87	4	18340·3
5450·63	2	18341·1
5450·42	2	18341·8
5449·94	4	18343·4
5449·69	4	18344·3
5449·13		18346·2
5448·83	2	18347·2
5448·57	3	18348·1
5448·15	3	18349·4
5447·75	3	18350·8
5447·50	2	18351·6
5447·31	5	18352·3
5446·52	4	18354·9
5446·26	2	18355·8
5446·09	3	18356·4
5445·86	3	18357·2
5445·49	2	18358·4
5444·89	3 b	18360·5
5444·65	2 b	18361·3
5444·43	5	18362·0
5444·16		18362·9

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5443·75	3	18364·3	5426·66	3	18422·1
5443·48	5	18365·2	5426·38	4	18423·1
5443·15	2	18366·3	5423·03	3	18424·3
5442·86	6	18367·3	5425·85	3	18424·9
5442·52	3	18368·4	5425·55	5	18425·9
5442·21	4	18369·5	5425·00	5	18427·8
5441·95	4	18370·4	5424·59	3	18429·2
5441·77	?	18371·0	5424·27	5	18430·3
5441·32	5 b	18372·5	5423·90	2	18431·3
5440·87*	4	18374·0	5423·53*	5	18432·8
5440·65	4	18374·7	5423·06	4	18434·4
5440·24	4	18376·1	5422·64	4	18435·8
5439·75	6	18377·8	5422·22	5	18437·2
5439·53	2	18378·6	5421·88	5	18438·4
5439·31	2	18379·3	5421·53	2	18439·6
5439·05	5	18380·2	5421·25	4	18440·4
5438·74	3	18381·2	5420·98	3	18441·4
5438·46	5	18382·2	5420·61	6	18442·7
5438·15	2	18383·2	5420·16	2	18444·2
5437·90	4	18384·0	5419·87	4	18455·2
5437·53	4	18385·3	5419·62	2	18456·1
5437·32	4	18386·0	5419·31	5s	18457·1
5436·98		18387·2	5418·99	4s	18458·2
5436·74	8	18388·0	5418·23	6*	18460·8
5436·39		18389·2	5417·87	2	18462·0
5436·12	3⊙	18390·1	5417·50	6	18463·2
5435·90	2	18390·8	5417·03	7	18464·8
5435·61	3	18391·8	5416·82	2	18465·5
5435·31	5	18392·8	5416·60	4	18465·3
5435·09	2	18393·6	5416·31	4	18467·3
5434·55	2⊙?	18395·4	5415·96	6	18468·4
5434·28	4	18396·3	5415·56		18469·8
5433·98	2	18396·4	5415·15	4	18471·2
5433·71	4	18398·3	5414·76	6	18472·5
5433·26	5	18399·8	5414·35	4	18473·9
5432·81	3	18401·3	5413·91	7	18474·4
5432·25	7	18403·2	5413·63	4	18475·4
5431·95	2	18404·2	5413·48	4	18476·9
5431·56	3	18405·5	5413·08	3	18478·3
5431·24	4	18406·6	5412·89	5	18178·9
5431·03	2	18407·3	5412·46	3	18480·4
5430·60	4	18409·8	5412·23	3	18481·2
5430·24	5	18410·0	5411·89	5	18482·3
			5411·62	2	18483·2
Group 5430–5406			5410·93	6 ⊙?	18485·6
			5410·64	2	18486·6
5429·73	4	18411·7	5410·32	2	18487·7
5429·43	4	18412·7	5409·88	4	18489·2
5429·22	4	18413·4	5409·46	3	18490·6
5428·77	4	18415·0	5409·19	4	18491·6
5428·46	3	18416·0	5408·91	6	18492·5
5428·22	4	18416·8	5408·42	3	18493·2
5428·00	3	18417·6	5408·10	5	18494·3
5427·82	3	18418·2	5407·86	3	18496·1
5427·54	3	18419·1	5407·58	4	18497·1
5427·25	4	18420·1	5407·23	4	18498·2
5426·90	3	18421·3	5407·03	3	18498·9

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5406·80	2	18499·7	5386·59	3	18559·1
5406·58	2	18500·5	5386·10		18560·8
5406·33	2	18501·3	5385·81	3	18561·8
			5385·58	3	18562·6
			5385·22		18563·8
Group 5406–5372			5384·93	4	18564·9
			5384·55	5	18565·2
5405·52	4	18504·1	5384·14	5	18567·6
5405·18	4	18505·2	5383·46	3	18569·8
5404·76	3	18506·7	5383·24	2	18570·7
5403·89	4	18499·7	5382·98	3	18571·6
5403·16	4	18502·2	5382·78	3	18572·3
5402·38	5	18504·0	5382·52	3	18573·2
5402·08	3	18504·9	5382·25	4	18574·1
5401·67		18507·3	5382·00	2	18574·9
5401·33	3	18508·5	5381·71	2	18576·0
5401·00	4	18509·6	5381·37*	5⊙	18577·2
5400·25	4	18512·2	5381·05	2	18578·2
5499·68	5	18514·1	5380·71*	4b	18579·4
5499·39	2	18515·1	5380·21	4	18581·1
5499·09	2	18516·1	5379·65	5	18583·1
5498·84	2	18517·0	5378·79	4	18586·1
5498·55	5	18518·0	5378·50	3	18587·1
5497·89	3	18520·3	5377·93	6	18589·0
5497·37	4⊙	18522·0	5377·56	4	18590·3
5496·90	5	18523·6	5377·33	3	18591·1
5396·54	3	18524·9	5377·02	4	18592·2
5396·33	3	18525·6	5376·74	3	18593·1
5395·95	3	18526·9	5376·26	2n	18594·8
5395·73	3	18527·7	5375·92	7	18596·0
5395·46	3	18528·6	5375·39	3	18598·8
5395·24	2	18529·4	5375·12	3	18598·7
5395·01	3	18530·1	5374·84	3	18599·7
5394·66	4b	18531·3	5374·49	2	18600·9
5394·18	4	18533·0	5374·25	3	18601·7
5393·91	2	18533·9	5373·74	3	18603·5
5393·66	4	18534·8	5373·57	3	18604·1
5393·23	2	18536·3	5373·01	4	18606·1
5392·74	4	18538·0	5372·65	2	18607·3
5392·52	2	18538·7	5372·30	6	18608·5
5392·29	2	18539·5	5372·11	6	18609·2
5392·05	3	18540·3			
5391·77	4⊙	18541·3	Group 5372–5354		
5391·47	2	18542·3			
5391·16	3	18543·4	5371·31	3	18611·9
5390·90	6	18544·3	5371·01	3	18613·0
5390·48	2	18545·7	5370·60*	3*	18614·4
5389·92*	6	18547·7	5369·93	5n	18616·7
5389·57	2	18548·9	5369·44	5	18618·4
5389·31	2	18549·8	5369·00	3	18619·9
5388·93	4	18551·1	5368·61*	4*	18621·3
5388·61	3	18552·2	5368·18	3	18622·8
5388·15	4	18553·7	5367·45	3	18625·3
5387·72	3	18555·3	5367·21	[illegible]	18626·1
5387·49	3	18556·0	5366·47	3	18628·7
5387·22	3	18557·0	5366·16	2	18629·8
5386·92	2	18558·0	5365·64	5⊙	18631·6

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5365·39	3	18632·5
5364·82	3	18634·4
5364·27	5	18636·4
5364·00	4	18637·3
5363·44	4	18639·2
5363·20	4	18640·1
5362·85	3	18641·3
5362·36	4	18643·0
5361·92*	4	18644·5
5361·62	2	18645·6
5361·37	4	18646·4
5361·07	4	18647·6
5360·69	3	18648·8
5360·33	3	18650·1
5360·00	4	18651·2
5359·73	3	18652·2
5359·46	3	18653·1
5359·22	3	18653·9
5358·95	3	18654·9
5358·69	2	18655·7
5358·35	5	18656·9
5357·92	4	18657·4
5357·64	2	18658·3
5357·38	4	18660·2
5357·06	3	18660·3
5356·49	7	18662·3
5355·62	5	18666·4
5355·24	3	18667·7
5355·01	3	18668·5
5354·71	3s	18669·5
5353·80	7	18672·7
Group 5354–5333		
5353·25	2	18674·6
5353·00	4	18675·5
5352·62	3	18676·8
5352·21	3	18678·3
5351·64	2	18680·3
5351·44	4	18681·0
5351·19	3	18681·8
5350·86	3	18683·0
5350·65	2	18683·7
5350·37	4	18684·7
5350·15	5	18685·5
5349·74	5	18686·9
5349·06	4	18689·3
5348·35	2	18691·7
5348·06	6	18692·8
5347·87		18693·4
5347·48	4	18694·8
5346·93	3	18696·7
5346·66	4	18697·7
5346·42	3	18698·5
5346·07	3	18699·7
5345·80	4	18700·7
5345·41	5	18702·0
5345·02	2	18703·4
5344·72	3	18704·4
5344·45	4	18705·4
5344·09	4	18706·6
5343·76	5s⊙	18707·8
5343·41	4	18708·0
5343·12	5	18709·1
5342·80	4	18711·2
5342·38	6	18712·6
5341·82	6	18714·6
5340·92	6	18717·8
5340·56	3	18719·0
5340·01	4	18721·0
5339·65	4	18722·2
5339·24	4	18723·7
5338·85	3	18724·0
5338·60	2	18725·9
5338·31 }	7	18726·9
5338·07 }		18727·8
5337·76	2	18728·8
5337·46	4s	18729·9
5336·83	2	18732·1
5336·53	4	18733·2
5336·23	2	18734·2
5335·91	2	18735·3
5335·60	4	18736·4
5334·91 }	4	18738·9
5334·70 }		18739·6
5334·23 }	5	18741·2
5333·94 }		18742·3
5333·49	3	18743·8
5333·11	6	18745·2
Group 5333–5317		
5332·80	3	18746·3
5332·56	2	18747·1
5332·28	3	18748·1
5332·07	3	18748·8
5331·79	3	18749·8
5331·55	3	18750·7
5331·30	4	18751·5
5331·02	2	18752·5
5330·74	5	18753·5
5330·44	5	18754·6
5330·06	5	18755·9
5329·60 }	8	18757·5
5329·30 }		18758·6
5328·09*	5	18762·8
5327·81	2	18763·8
5327·34	5	18765·5
5327·00	5	18766·7
5326·67	4	18767·8
5326·40†	3 }	18768·8
5326·10	}	18769·9
5325·86	4	18770·7

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5325·61	3 †	18771·6	5308·18	2	18833·2
5325·24		18772·9	5307·77	5	18834·7
5325·03	4	18773·6	5307·27	5	18836·5
5324·72	4	18774·7	5306·92	2	18837·7
5323·98	4	18776·3	5306·65	4	18838·7
5323·76	5	18777·1	5306·30	5	18839·9
5323·40		18779·4	5306·12		18840·6
5323·07	4	18780·5	5305·86	2	18841·5
5322·61	4	18782·2	5305·59	4	18842·4
5322·26	3	18783·4	5305·22	4	18843·8
5321·84	2	18784·9	5305·09	3	18844·2
5321·53*	3*	18785·0	5304·90	2	18844·9
5321·15	4	18786·3	5304·55	4	18845·1
5320·81	3	18788·5	5304·34	2	18846·9
5320·55	3	18789·4	5304·06	5	18847·9
5320·27	4	18790·4	5303·68	3	18849·2
5319·77	6	18792·2	5303·50	2	18849·9
5319·56		18792·9	5303·25	3	18850·8
5319·11		18794·5	5303·05	3	18851·5
5318·66	4	18796·1	5302·86	3	18852·1
5318·40	3	18797·0	5302·15	3	18854·7
5318·09*	3	18798·1	5301·83	4	18855·8
5317·70	5	18799·5	5301·57	2	18856·7
5317·40	2	18800·6	5301·08*		18858·5
5317·16	4	18801·4	5300·74	3	18859·7
			5300·57	3	18869·3
			5300·20	3s	18861·6
Group 5317–5289			5299·81	3b	18863·0
			5299·43	3	18864·3
5316·90	4	18802·3	5298·35	4⊙	18868·2
5316·47	2	18803·9	5298·06	3	18869·2
5316·09	4 b* ?	18805·2	5297·48		18871·3
5315·85	2	18806·1	5296·48	4	18874·9
5315·60	2	18807·0	5296·15	5	18876·0
5315·30	4	18808·0	5295·73	†	18877·5
5315·08		18808·8	5295·29	3	18879·1
5314·83	2	18809·7	5295·04	3	18880·0
5314·55	5	18810·7	5294·77	3	18881·0
5314·30		18811·6	5294·32	4	18882·6
5313·85	3	18813·1	5293·94	4	18883·9
5313·46	4	18814·5	5293·56	5	18885·3
5313·09	3s	18815·8	5293·27	3	18886·3
5312·67	3	18816·3	5292·94	3	18887·5
5312·42	2	18818·2	5292·72	3	18888·3
5312·19	2	18819·0	5292·42	2	18889·3
5311·91	4	18820·0	5292·06	5	18890·6
5311·66	2	18820·9	5291·78	2	18891·6
5311·17	4	18822·6	5291·49	4	18892·7
5310·91	4	18823·6	5291·30	4	18893·3
5310·69	2	18823·3	5291·02	3	18894·3
5310·43	4	18824·3	5290·78	3	18895·2
5310·17	5 b	18826·2	5290·47	6	18896·3
5309·71		18827·8	5290·21		18897·2
5309·34	3	18829·1	5289·93	*	18898·2
5309·11	3	18829·9	5289·53	4	18899·7
5308·86	3	18830·8	5289·19	2	18900·9
5308·46	4	18832·2	5288·85	5	18902·1

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
Group 5289–5262		
5288·63	3	18902·9
5288·33	2	18904·0
5288·07	2	18904·9
5287·76	4	18906·0
5287·51	2	18906·9
5287·30	3s	18907·6
5287·03	3s	18908·6
5286·74	3* !	18909·6
5286·36	5	18911·0
5285·91	3	18912·6
5285·49	4⊙	18914·1
5285·11*	4	18915·5
5284·73	4	18916·8
5284·44	3⊙	18917·9
5283·75	3	18920·4
5283·44	2	18921·5
5283·08	4	18922·7
5282·83	3	18923·6
5282·53	2	18924·7
5281·97	2	18926·7
5281·77	2	18927·4
5281·50	2	18928·4
5281·07	4	18930·0
5280·74	3⊙	18931·1
5280·26	4	18932·9
5279·89	2	18934·2
5279·44	4	18935·8
5279·12	3	18936·9
5278·67	4	18938·6
5278·31	2	18939·9
5277·96	3	18941·1
5277·71	3	18942·0
5277·47	3	18942·9
5277·23	3	18943·7
5277·00	3	18944·6
5276·67	2	18945·7
5276·19	4	18947·5
5275·62	5⊙	18949·5
5274·81	3	18952·4
5274·34	4	18954·1
5274·02	4	18954·3
5273·73	5⊙	18956·3
5273·04*	5	18958·8
5272·68 } †	5	18959·1
5272·29 }		18961·5
5271·95	4	18962·7
5271·72	3	18963·5
5271·51	2	18964·3
5271·26	4	18965·2
5271·09	2	18965·8
5270·34*	2	18968·5
5269·43	4n	18971·8
5268·92	4	18973·6
5268·59	4	18974·8
5268·06	2	18976·7
5267·74	4	18977·9
5267·36	4	18978·2
5266·64	4	18981·8
5266·03*	3⊙	18984·0
5265·73	2	18985·1
5265·48	3	18986·0
5265·20	3	18987·0
5264·86	2	18988·2
5264·29	4	18990·3
5263·98	2	18991·4
5263·55	4	18993·0
5263·21	3	18994·2
5263·02	3	18995·9
5262·37	2	18997·2
Group 5262–5243		
5261·81	2	18999·3
5261·59	2	19000·1
5261·37	3	19000·8
5261·17	4	19001·6
5260·96	3 } b	19001·3
5260·40	4 }	19004·4
5260·10	3	19005·4
5259·87	3	19006·3
5259·54	5	19007·5
5259·22	3 } Min.	19008·6
5258·87*	5 }	19009·9
5258·54	2	19011·1
5258·32	3	19011·9
5258·10	4	19012·7
5257·83	4	19013·6
5257·43	4	19015·1
5257·09	3	19016·3
5256·82	3	19017·3
5256·32	6	19019·1
5255·79	6	19021·0
5255·06	2	19023·7
5254·74	5	19024·8
5254·30	4	19026·4
5254·03	2	19027·4
5253·77	5⊙	19028·3
5253·33	5	19029·9
5253·01	2	19031·1
5252·75	3	19032·0
5252·50	4	19032·9
5251·87	6	19035·2
5251·48	5	19036·6
5251·24	5	19037·5
5250·33	4	19040·8
5250·06	4	19041·8
5249·73	6	19043·0
5249·41	4	19044·2
5248·80	6 } Min.	19046·4
5248·30*	5 }	19048·2
5247·61	6	19050·7
5247·34	5⊙	19051·7

BROMINE (ABSORPTION)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5247·03	2	19052·8
5246·76	4	19053·8
5246·45	3	19054·9
5246·18	3	19055·9
5245·83*	4	19057·2
5245·33	6	19059·0
5245·01	} †	19060·1
5244·60	4 } †	19061·6
5244·33	3 } †	19062·6
5243·47	3 } †	19065·7
5242·66	3	19068·7
5242·37	5	19069·7
5241·88	6	19061·5
Group 5243–5215		
5241·72	6	19072·0
5241·48	3	19072·9
5241·34	3	19073·4
5241·12	2	19074·2
5240·75	5	19075·5
5240·44	2	19076·7
5240·15	5⊙	19077·7
5239·87	2	19078·7
5239·69	3	19079·4
5239·45	4	19080·3
5239·23	4	19081·1
5239·00	3	19981·9
5238·77		19082·7
5238·47		19083·8
5238·21 }		19084·8
5238·00 }		19085·6
5237·66*	⊙	19086·8
5237·37		19087·8
5236·88		19089·6
5236·07		19092·6
5235·70	⊙	19093·9
5235·19	4	19095·8
5234·69	3	19097·6
5234·43	3	19098·6
5234·00	6	19099·1
5233·62	5	19101·5
5232·82	5	19104·6
5232·50	4	19105·6
5232·18*	5	19106·8
5231·91 }	4 4 Lines	{ 19107·8
5231·39 }		{ 19109·7
5231·16	3	19110·5
5230·93	3	19111·4
5230·71	3	19112·2
5230·47	4	19113·0
5229·68	4	19115·9
5229·40	4	19117·0
5229·04	4	19118·3
5228·54	2	19120·1
5228·28	4	19121·0
5227·98	4	19122·1
5226·65	4	19127·0
5226·38	3	19128·0
5226·18	3	19128·7
5225·87	5⊙	19129·9
5225·45 }	5	19131·4
5224·61 }		19134·5
5224·23	4	19135·9
5223·97	4	19136·8
5223·75	2	19137·6
5223·44	5	19138·8
5223·02	5	19140·3
5222·32	5	19142·9
5222·04	3	19143·9
5221·82	5	19144·7
5221·47	4	19146·0
5221·05*	4	19147·5
5220·69	5	19148·9
5220·34	3	19150·1
5220·07	3	19151·1
5219·60*	5	19152·9
5219·28	4	19154·0
5218·03	2	19158·6
5217·54	3	19160·4
5217·23	3	19161·6
5216·95	4	19162·6
5216·45	2	19164·4
5216·19	2	19165·4
5215·92	7	19166·4
Group 5215–5202		
5214·85	3	19170·3
5214·53	3	19171·5
5214·23	3	19172·6
5213·98	3	19173·5
5213·59	2	19174·9
5213·31	3	19176·0
5213·07	3	19176·8
5212·82	2	19177·8
5212·47	2	19179·1
5212·14	4	19180·3
5211·83	5	19181·4
5211·56	2	19182·4
5211·30	2	19183·4
5211·00	3	19184·5
5210·40	4	19186·7
5210·08	3	19187·9
5209·75	3	19189·1
5209·41	4	19190·3
5208·39	2	19194·1
5207·80	4	19196·3
5207·39	2	19197·8
5207·21	2	19198·4
5206·96	2	19199·4
5205·77	2	19203·8
5205·54	2	19204·6
5205·28	4s	19205·6

Bromine (Absorption)—*continued.*

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5204·52	3s	19208·4
5203·96	3	19210·4
5203·73	4b	19211·3
5203·33		19212·8
5203·04	3 b	19213·8
5202·33	3	19216·5
Group 5202–5184		
5202·07	3	19217·4
5201·77	2	19218·5
5201·44	4	19219·7
5201·00*	3	19221·4
5200·72	4n	19222·4
5200·44		19223·4
5200·18	4	19224·4
5199·86		19225·6
5199·53	2	19226·8
5199·29	2	19227·7
5199·00	4⊙	19228·8
5198·21	5	19231·7
5197·90	5	19232·8
5197·49	4	19234·4
5197·17	2	19235·5
5196·91	4	19236·5
5196·69	5	19237·3
5196·41	4	19238·3
5196·04	4	19239·7
5195·52	4	19241·6
5194·94	3	19243·8
5194·63	3	19244·9
5194·24	5	19246·7
5193·96	2	19247·4
5193·61	4	19248·7
5193·28	5	19249·9
5193·00	5	19251·0
5192·34	3	19253·4
5191·80	5⊙	19255·4
5191·52	2	19256·5
5191·28	3	19257·4
5190·92	3	19258·7
5190·50	4	19260·3
5190·14	3	19261·6
5189·59	6	19263·6
5188·76	4	19266·7
5188·22	5	19268·7
5187·88	5	19270·0
5187·55	3	19271·2
5187·23	5	19272·4
5186·89	2	19273·7
5186·55	5	19274·9
5186·00	4	19277·0
5185·46*	5 b	19279·0
5185·17	5	19280·1
5184·92		19281·0
5184·57	6	19282·3
5184·29	6	19283·3

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
Group 5184–5159		
5183·60	6	19285·9
5183·25	2	19287·2
5183·06	3	19287·9
5182·72	4n	19289·2
5182·27	4n	19290·9
5181·83	4n	19292·5
5181·62	3n	19293·3
5181·34	3	19294·3
5180·82	5	19296·3
5180·39	4	19297·9
5180·03	4	19299·2
5179·68	4	19300·5
5179·26	2 b	19302·1
5178·56	7	19304·7
5178·28	3	19305·7
5178·00	5b	19306·8
5177·56		19308·4
5177·30	2	19309·4
5177·05	4 b	19310·3
5176·66	3	19311·8
5176·39	5	19312·8
5176·07	5	19314·0
5175·68	5	19315·4
5175·41	2	19316·4
5174·91	7	19318·3
5174·46	4	19320·0
5173·82	5	19322·4
5173·52	5	19323·5
5172·72	5	19326·5
5172·43	3	19327·6
5171·64	3	19330·5
5171·08	3	19332·6
5170·78	4	19333·7
5170·60	4	19334·4
5170·36	3	19335·3
5170·11	3	19336·2
5169·85	4	19337·2
5169·60	3	19338·2
5168·26	6	19343·2
5167·41	6	19346·4
5167·04	4	19347·7
5166·87	2	19348·4
5166·31	4	19350·5
5165·93	4	19351·9
5165·39	4	19353·9
5165·05	4	19355·2
5164·31	5	19358·0
5163·86	4	19359·6
5163·35	6*	19361·6
5163·00	3	19362·9
5162·30	4	19365·5
5161·93	5	19366·9
5161·47	5	19368·6
5161·23		19369·5
5160·54	6v.	19372·1
5159·97	4	19374·2
5159·70	2	19375·3

Aluminium Oxide (Arc Spectrum).

Hasselberg, 'Kongl. Svenska Vetenskaps-Akademiens Handlingar,' Bandet 24, 1892.

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency [1]	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency
Group 4471–4648					4483·50		1·33	6·6	22297·4
					4483·81	5bs	1·34		22295·9
4470·63	8	1·33	6·7	22361·5	4483·95				22295·2
4471·18	b			22358·8	4484·19	5			22294·0
4471·30				22358·2	4484·90	4			22290·4
4471·49	3			22357·2	4485·12	4 b			22289·3
4471·67	2			22356·3	4485·27	4			22288·6
4471·86	4		6·7	22355·4	4485·64	5			22286·8
4472·11	4		6·6	22354·2	4485·81	3 b^{v}			22285·9
4472·33	4			22353·1	4485·97	2			22285·1
4472·59	3			22351·8	4486·41	4			22282·9
4472·87*	5			22350·4	4486·59	4			22282·0
4473·16*	4			22349·0	4486·75	4			22281·2
4473·48*	4			22347·4	4487·11	4			22279·5
4473·78*	4			22345·9	4487·40	3			22278·0
4474·09	5n			22343·3	4487·56	5			22277·2
4474·51	6n			22342·2	4487·95	4			22275·3
4474·89	5			22340·3	4488·18	3			22274·1
4475·00	3			22339·8	4488·37	3			22273·2
4475·25	5			22338·5	4488·75	5n			22271·3
4475·36	2			22338·0	4489·02	3			22270·0
4475·69	5			22336·3	4489·18	3			22269·2
4475·80	2			22335·8	4489·30	2			22268·6
4476·58	5			22331·9	4489·61	5n			22267·0
4476·79				22330·8	4489·86	4			22265·8
4477·00	5			22329·8	4490·04	3			22264·9
4477·23	2			22328·6	4490·26	2			22263·8
4477·59	5			22326·8	4490·46*	4			22262·8
4477·87	2			22325·4	4490·73	5			22261·5
4478·09	4			22324·3	4490·89	5			22260·7
4478·22	3			22323·7	4491·10	2			22259·7
4478·45	2			22322·5	4491·34*	4			22258·5
4478·64	6			22321·6	4491·63	4			22257·0
4478·79	2			22320·9	4491·76	4			22256·4
4479·17	5			22319·0	4492·05	3			22254·7
4479·38	3			22317·9	4492·21*	4			22254·2
4479·70	5b			22316·3	4492·49	4			22252·8
4479·91				22315·3	4492·69	4			22251·8
4480·34	5			22313·1	4493·10	5			22249·7
4480·53	3			22312·2	4493·38	4			22248·4
4480·83	5b			22310·7	4493·58	3			22247·4
4481·02				22309·7	4494·02	2			22245·2
4481·13	2			22309·2	4494·22	9			22244·2
4481·31	2			22308·3	4495·38	4			22238·5
4481·52	3			22307·3	4495·55	4			22237·6
4481·77				22306·0	4495·81	4 b			22236·3
4482·14	4n			22304·2	4495·98	5			22235·5
4482·63	3			22301·7	4496·30	5			22233·9
4482·82	5b			22300·8	4496·56	4			22232·6
4483·22				22298·8	4496·86	6n			22231·1

[1] In Vacuo.

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency
4497·19	3	1·34	6·6	22229·5	4508·57	2	1·34	6·6	22173·4
4497·30	3			22229·0	4508·80	4			22172·2
4497·53	4			22227·8	4508·98	5			22171·4
4497·91*	5			22225·9	4509·10	5			22170·8
4498·29	4			22224·1	4509·55	5			22168·6
4498·49	2			22223·1	4509·77	5			22167·5
4498·67	2			22222·2	4510·03	2			22166·2
4498·88	2			22221·1	4510·15	2			22165·5
4499·06*	4			22220·3	4510·32	2			22164·8
4499·41	4			22218·5	4510·48	5			22164·0
4499·53				22217·9	4510·61	5			22163·3
4499·71	2			22217·0	4510·83	2			22162·3
4499·92	5			22216·0	4511·06	4			22161·1
4500·00				22215·6	4511·25	6			22160·2
4500·16	2			22214·8	4511·38	6			22159·6
4500·43*	5			22213·5	4511·89	3			22157·1
4500·63	4			22212·5	4512·07	6			22156·2
4500·86	4			22211·4	4512·20	6			22155·5
4500·99	4			22210·7	4512·48	3			22154·2
4501·10	4			22210·2	4512·67	5			22153·2
4501·34	4			22209·0	4512·91	5			22152·0
4501·51	4			22208·2	4513·05	4			22151·4
4501·65	4			22207·5	4513·35	4			22149·9
4501·86	3			22206·4	4513·52	4			22149·1
4502·00	5			22205·7	4513·71	4			22148·1
4502·13	5			22205·1	4513·84	4			22147·5
4502·37	4 ⊙			22203·9	4514·39	4			22144·8
4502·53	4			22203·1	4514·63*	5b			22143·6
4502·72	5			22202·2	4515·03	3			22141·6
4502·98	3			22200·9	4515·18	3			22140·9
4503·13	5			22200·2	4515·27	3			22140·5
4503·23	5			22199·6	4515·42	4			22139·7
4503·51	3			22198·3	4515·59	3			22138·9
4503·69	4			22197·2	4515·95	3			22137·1
4503·84	3			22196·7	4516·17	4			22136·1
4504·14	5b			22195·2	4516·37	4			22135·1
4504·43				22193·8	4516·54	10			22134·2
4504·74	4			22192·2	4517·04	3			22131·8
4504·89	4			22191·5	4517·27	4			22130·7
4505·02	4			22190·9	4517·39	3			22130·1
4505·36	5			22189·2	4517·64	3			22129·8
4505·54	3			22188·3	4517·82	3			22128·0
4505·68	5			22187·6	4517·98	4			22127·2
4506·01	4			22186·0	4518·16	4s			22126·3
4506·17	4			22185·2	4518·27	2			22125·8
4506·31	3 b			22184·5	4518·44	2			22124·9
4506·67	4			22182·7	4519·00	3			22122·2
4506·86	2			22181·8	4519·14	4			22121·5
4506·99	4			22181·2	4519·28	3			22120·8
4507·35	4			22179·4	4519·67*	4			22118·9
4507·53	5			22178·5	4519·94	4	1·34		22117·6
4507·65	3n			22177·9	4520·10	5	1·35		22116·8
4508·08	3			22175·8	4520·36	4			22115·5
4508·26	3			22174·9	4520·47	4			22115·0
4508·37	5			22174·4	4520·71	3			22113·8

Aluminium Oxide (Arc Spectrum)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency
4520·84	4	1·35	6·6	22113·2	4534·49	4b	1·35	6·6	22046·6
4521·08	6			22112·0	4535·13	5 } b			22043·5
4521·19	5			22111·5	4535·48	3s }			22041·8
4521·65	5			22109·2	4535·67*	3			22040·9
4521·90	5			22108·0	4535·92	4			22039·6
4522·08	6			22107·1	4536·05	2			22039·0
4522·40	4			22105·5	4536·16	2			22038·5
4522·53	5			22104·9	4536·52	3			22036·7
4522·86 }	7b			22103·3	4536·75*	6			22035·6
4523·45 }				22100·4	4537·00	4			22034·4
4523·85	4 }			22098·5	4537·69	10			22031·0
4523·98	5 } b			22097·8	4537·98	}			22029·6
4524·20*	4 }			22096·7	4538·14	} b			22028·9
4524·47	5 }			22095·4	4538·33	}			22027·9
4524·66	2			22094·5	4538·55	5 }			22026·8
4524·88	4			22093·4	4538·80	2			22025·5
4525·04	5			22092·5	4539·28	2			22023·3
4525·47	3			22091·5	4539·46*	6			22022·4
4525·58	4			22090·0	4539·73	2		6·6	22021·1
4525·95	4			22088·2	4540·36*	6		6·5	22018·2
4526·14	5			22087·3	4540·65*	6			22017·8
4526·33	4			22086·3	4540·92	3			22016·5
4526·62	4			22084·9	4541·08	2			22015·7
4526·75	4			22084·3	4541·33	6b			22013·5
4527·23	5			22082·0	4541·57	2			22012·3
4527·42	6⊙			22081·0	4541·72	2			22011·6
4527·87	5			22078·8	4541·86	2			22010·9
4528·01	4			22078·2	4542·03	4s			22010·1
4528·56	6 } bn			22075·5	4542·24*	4			22009·1
4528·74	}			22074·6	4542·50*	4			22007·8
4529·01	2			22073·3	4542·84	3			22006·2
4529·19	4			22072·4	4543·04	2			22005·2
4529·30	4			22071·9	4543·23*	7			22004·3
4529·48	4			22071·0	4543·71	4			22001·9
4529·69	4			22070·0	4543·90	3			22001·0
4529·87	4			22069·1	4544·17 }	6			21999·7
4530·00	4			22068·8	4544·28 }				21999·2
4530·22	2			22067·4	4544·53	3			21998·0
4530·38	2			22066·6	4544·71	5			21997·1
4530·53	4			22065·9	4545·15	5			21995·0
4530·68	5			22065·1	4545·29	5			21994·3
4530·84	4⊙			22064·4	4545·52	2			21993·2
4531·27	5⊙			22062·3	4545·70	4			21992·3
4531·42	4			22061·5	4545·91	3			21991·3
4531·81	5			22059·6	4546·10 }	5b (4			21990·4
4532·00	6s			22058·7	4546·39 }	lines)			21989·0
4532·13	4			22058·1	4546·57	3			21988·1
4532·76	5			22055·0	4546·79	4			21987·0
4532·93	3			22054·2	4546·94	3			21986·3
4533·04	4			22053·6	4547·18	3			21985·1
4533·20	4 }			22052·9	4547·33	6			21984·4
4533·36	3 }			22052·1	4547·53	5			21983·5
4533·54	5 } b			22051·2	4547·91*	4b			21981·6
4533·68	4 }			22050·5	4548·15	3			21980·5
4534·24	8b			22047·8	4548·27	2			21979·9

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4548·40	4	1·35	6·5	21979·2
4548·58	2			21978·4
4548·71	4			21977·5
4548·93	2			21976·7
4549·18	4			21975·5
4549·36	4			21974·6
4549·51	4			21973·9
4549·77*	5			21972·6
4550·02	2			21971·4
4550·16	2			21970·7
4550·40	6			21969·6
4550·65*	5			21968·4
4550·90	2			21967·2
4551·10*	4			21966·2
4551·33	2			21965·1
4551·54	2			21964·1
4551·83	5			21962·7
4552·04	4			21961·7
4552·22	3			21960·8
4552·55	5bn			21959·2
4552·81	3			21958·0
4552·91	2			21957·5
4553·15	4b			21956·3
4553·30				21955·6
4553·48	3			21954·7
4553·79	3			21953·2
4554·01*	6			21952·2
4554·29*	4			21950·8
4554·65	4			21959·1
4554·80	3s			21958·4
4554·98	4	1·35		21957·5
4555·14	2	1·36		21956·7
4555·24	3			21956·2
4555·44	4			21955·3
4555·57	5			21954·6
4555·83	3			21953·4
4556·14	4			21951·9
4556·46	2			21950·4
4556·66	3			21949·4
4556·78	3			21948·9
4557·06	4			21947·5
4557·20	4			21946·8
4557·37	2			21946·0
4557·52	3			21945·3
4557·84	8			21943·7
4558·27	3			21941·6
4558·55	2			21940·3
4558·71	4			21939·5
4558·85	4			21938·8
4559·09	5			21937·7
4559·33	2			21936·5
4559·52	3†			21935·6
4559·75				21934·5
4559·93	4			21933·7
4560·14	2			21932·6
4560·38	4	1·36	6·5	21931·5
4560·56	3			21930·6
4560·69	3			21930·0
4560·88	3 b			21929·1
4561·02	2			21928·4
4561·21	4			21927·5
4561·39	4			21926·6
4561·48	3			21926·2
4561·75	4			21924·9
4562·17	4			21922·9
4562·30	5			21922·3
4562·47	5			21921·4
4562·70	4			21920·3
4563·12	4			21918·3
4563·34	4			21917·3
4563·57	4			21906·2
4563·77	4			21905·2
4564·01	4			21904·0
4564·26	4			21902·8
4564·47	2			21901·8
4564·71	3			21900·7
4565·48	3 b			21897·0
4565·69	4			21896·0
4565·98	3			21895·6
4566·17*	5			21893·7
4566·40	3			21892·6
4566·99	4			21889·8
4567·10	2			21889·2
4567·32	4			21888·2
4567·55	4			21887·1
4567·74	2			21886·2
4567·95	4			21885·2
4568·15	3			21884·2
4568·35	3			21883·2
4568·56	3			21882·2
4568·79	3			21881·1
4569·01	5			21880·1
4569·13	5			21879·5
4569·40	5			21878·2
4569·66	4			21877·0
4569·76	5			21876·5
4570·02	4			21875·2
4570·24	5			21874·2
4570·44	6			21873·2
4570·67	4			21871·5
4571·11	5			21870·0
4571·30	4			21869·1
4571·51	3			21868·1
4571·65	4†			21867·4
4571·87				21866·4
4572·22*	4			21864·7
4572·42	5			21863·7
4572·60	3			21862·9
4572·73	2			21862·3
4572·95	4			21861·2

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency
4573·13	4	1·36	6·5	21860·4	4585·47	4	1·36	6·5	21801·5
4573·31	4			21859·5	4585·76	3			21800·1
4573·48	3			21858·7	4585·96*	4			21799·2
4573·71	4			21857·6	4586·27	4			21797·7
4573·87	4			21856·8	4586·50	4			21796·6
4574·05	4			21855·0	4586·69	4			21795·7
4574·19	2			21855·3	4586·88	4			21794·8
4574·48	4b			21853·9	4587·12	3			21793·7
4574·67	4b			21853·0	4587·22				21792·2
4574·91	2n			21851·8	4587·48	4			21792·0
4575·18	3			21850·6	4587·69	3			21791·0
4575·37	2			21849·6	4587·84	4			21790·2
4575·57	3			21848·7	4588·08	3			21789·1
4575·76	2			21847·8	4588·26	4			21788·2
4575·98	3			21846·7	4588·51	4			21787·1
4576·18	3			21845·8	4588·71	2			21786·1
4576·47	6			21844·4	4588·89	3	1·36		21785·3
4576·76	5 b			21843·0	4589·17	2	1·37		21783·9
4577·00	5			21841·9	4589·55	3b^{r}			21782·1
4577·22	2			21840·8	4589·73	2			21781·3
4577·37	3			21840·1	4589·87	3			21780·6
4577·56	3			21838·2	4590·14	3			21779·3
4577·71	3			21838·5	4590·30	3			21778·6
4577·88	3			21837·5	4590·50	3			21777·6
4578·11	4			21836·6	4590·80	4			21776·2
4578·40	2			21835·2	4590·95	4			21775·5
4578·58	4			21834·3	4591·21	3			21774·2
4578·93	3			21832·7	4591·35	2			21773·6
4579·18	5n			21831·5	4591·57	3 b			21772·5
4579·46*	3			21830·1	4591·73	3			21771·8
4579·84	2			21828·3	4591·86	3			21771·2
4580·07	3			21827·2	4592·07*	4			21770·2
4580·25	3			21826·4	4592·29	3b			21769·1
4580·43*	4			21825·5	4592·46	3			21768·3
4580·70	3			21824·2	4592·64	3			21767·5
4580·94	3			21823·1	4592·92	3			21766·1
4581·18	5			21821·9	4593·14	4			21765·1
4581·52	4			21820·3	4593·42	4			21763·8
4581·68	3			21819·5	4593·50				21763·4
4581·96	3			21818·2	4593·72	4			21762·3
4582·07	3			21817·5	4593·97	6			21761·2
4582·19	2			21817·1	4594·25	4			21759·8
4582·44	4			21815·9	4594·51	3			21758·6
4582·71	5			21814·7	4594·68	4			21757·8
4582·96	5			21813·5	4594·87	4			21756·9
4583·46*	2			21811·1	4595·13	b			21755·7
4583·71	4			21809·9	4595·39	4			21754·4
4583·93	4			21808·8	4595·63	2			21753·3
4584·18	3			21807·6	4595·86	2			21752·2
4584·36	3			21806·8	4596·05*	5			21751·3
4584·58	4			21805·5	4596·25	4			21750·4
4584·77	3			21804·6	4596·35				21749·9
4584·89	3			21803 3	4596·53*	2			21749·1
4585·02	2			21803·6	4596·82	4			21747·7
4585·23	4			21802·6	4596·93	4			21747 1

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency
4597·16	2	1·37	6·5	21746·1	4611·94	2	1·37	6·4	21676·4
4597·40	3			21744·9	4612·12	3			21675·6
4597·60*	4bn			21744·0	4612·32	2			21674·7
4597·86*	3			21742·7	4612·48	2			21673·9
4598·55	4			21739·5	4612·63	3			21673·2
4598·82	2			21738·2	4612·85	4			21672·2
4598·99	3			21737·4	4613·16	3			21670·7
4599·28 }	5			21736·0	4613·46	4			21669·3
4599·41 }				21735·4	4613·85*	3			21667·5
4599·79	4n			21733·6	4614·09	2			21666·3
4600·22	4			21731·6	4614·27	2			21665·5
4600·43	3			21730·6	4614·49	4			21664·5
4600·71	4			21729·3	4614·78	4			21663·1
4601·16	3n			21727·1	4615·00	3			21662·1
4601·36	2n			21726·2	4615·22	3			21661·0
4601·65	4n			21724·8	4615·43	2			21660·0
4601·94	4n			21723·5	4616·14	4n } b			21656·7
4602·41	2			21721·2	4616·68	4n }			21654·2
4602·58	3			21720·4	4616·97	3			21653·8
4602·88*	4			21719·0	4617·20 }	3†			21651·7
4603·43*	4			21716·4	4617·45 }				21650·6
4603·72*	4			21715·1	4617·66	3			21649·6
4604·02*	2			21713·6	4618·00	3			21648·0
4604·17	2			21712·9	4618·14	2			21647·3
4604·39*	2			21711·9	4618·39*	3			21646·2
4604·73	4⊙			21710·3	4618·64	2			21645·0
4604·95	3			21709·3	4618·84	3			21644·1
4605·25	4			21707·8	4619·10	3			21642·8
4605·60 }	4			21705·2	4619·46 }	3⊙			21641·1
4605·69 }				21706·8	4619·78 }				21639·6
4605·93	4			21704·6	4620·01	2			21638·6
4606·28	2n			21703·0	4620·24	2			21637·5
4606·48	3			21702·0	4620·54	4			21636·1
4606·65	2			21701·2	4620·77	3			21635·0
4606·85	3			21700·3	4620·95 }				21634·2
4607·13*	4			21699·0	4621·14 }	3b			21633·3
4607·38	2			21698·8	4621·32 }				21632·4
4607·51	2			21697·2	4621·52	2			21631·5
4607·68*	3			21696·4	4621·73	2			21630·5
4608·01 }	5			21694·8	4621·95	5			21629·5
4608·12 }				21694·3	4622·20	2			21628·3
4608·40*	5			21693·0	4622·39	4			21627·4
4608·62	2		6·5	21692·0	4622·53	2			21626·8
4608·91	4		6·4	21690·6	4622·84	5			21625·4
4609·73	4			21686·8	4623·20	4			21623·6
4609·88	2			21686·1	4623·45	4			21622·5
4609·96	2			21685·8	4623·85	3			21620·6
4610·14	4			21684·9	4624·17	3			21619·1
4610·27	3			21684·3	4624·40	3			21618·0
4610·51	2			21683·2	4624·58	3			21617·2
4610·74	5			21682·1	4624·76	3			21616·3
4610·94	2			21681·1	4624·96	4			21615·4
4611·09	4			21680·4	4625·30	4n	1·37		21613·8
4611·20	3			21679·9	4625·67 }	4b	1·38		21612·1
4611·53	3bʳ			21678·4	4625·77 }				21610·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency
4626·14		1·38	6·4	21609·9	4640·83	3†	1·38	6·4	21541·5
4626·36	4b			21608·9	4641·07				21540·3
4626·52				21608·1	4641·29	3			21539·3
4626·74	4			21607·1	4641·45	2			21538·6
4626·89	4			21606·4	4641·72	3n			21537·3
4627·07	2			21605·7	4641·96	2			21536·2
4627·28	2			21604·6	4642·15	2			21535·3
4627·42	2			21603·9	4642·36	3bᵛ			21534·4
4627·73	4			21602·5	4642·82	2			21532·2
4628·00	3			21601·2	4643·01	2			21531·3
4628·20	3			21600·3	4643·21	2			21530·4
4628·51	4			21598·8	4643·39	2			21529·6
4628·83	3			21597·3	4644·39	2			21524·9
4629·18	2			21595·7	4644·65	5n			21523·7
4629·33	2			21595·0	4644·95	4			21522·4
4629·81	2			21592·8	4645·09	3			21521·7
4629·96	4			21592·1	4645·37	3			21520·4
4630·30	4⊙			21590·5	4645·61	2			21519·3
4630·62	2			21589·0	4645·94	2			21517·8
4631·07	3			21586·9	4646·09	2			21517·1
4631·34	2			21585·6	4646·43	4n			21515·5
4631·56	2			21584·6	4646·79	3			21513·8
4631·76	2			21583·7	4647·28	2			21511·6
4631·98	2			21582·6	4647·47	2			21510·7
4632·13	3			21581·9	4647·79	2			21509·2
4632·28	3			21581·2	4648·07	2			21507·9
4632·64	4			21579·6					
4633·02	2			21577·8					
4633·18	3			21577·0	Group 4648	–4842			
4633·44	2			21575·8					
4633·56	3			21575·3	4648·14	12			21507·6
4633·98	3 b			21573·3	4648·99	3			21503·6
4634·43	2			21571·2	4649·11	4			21503·1
4634·61	2			21570·4	4649·31	4			21502·2
4634·77	3			21569·6	4649·47	4			21501·4
4634·94	2			21568·8	4649·69	4			21500·4
4635·10	2			21568·1	4649·89	4			21499·5
4635·21	2			21567·6	4650·12	4			21498·4
4635·41	3			21566·7	4650·39	4*			21497·2
4635·72	2			21565·2	4650·67	4* n			21495·9
4635·87	3			21564·5	4650·97	4*			21494·5
4636·04	2			21563·7	4651·27	5*			21493·1
4636·18	2			21563·1	4651·58	5			21491·7
4636·35	3			21562·3	4651·67				21491·2
4636·48	2			21561·7	4651·94	5			21490·0
4636·84	4			21560·0	4652·04				21489·5
4637·29	3			21557·9	4652·30	5			21488·3
4637·56	3			21556·7	4652·37				21488·0
4638·55*	2			21552·1	4652·68	4			21486·6
4638·91	4 b			21550·4	4652·78	3			21486·1
4639·23*	3			21548·9	4653·06	4			21484·8
4639·54	4n			21548·5	4653·18	3			21484·3
4640·08	2			21544·9	4653·51	4			21482·7
4640·33	2			21543·8	4653·61	3			21482·3
4640·62*	3			21542·4	4653·94	4			21480·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4654·04	4	1·38	6·4	21480·3
4654·40	5			21478·6
4654·52	4			21478·1
4654·86	5			21476·5
4655·02	4			21475·8
4655·34	6			21474·3
4655·50	4			21473·6
4655·86	5			21471·9
4656·02	4			21471·2
4656·42	6			21469·3
4656·57	4			21468·6
4656·91	6			21467·1
4657·10	4			21466·2
4657·51	6			21464·3
4657·70	4			21463·4
4658·07	6			21461·7
4658·27	4			21460·8
4658·68*	6			21458·9
4658·91	4			21458·8
4659·25	5			21456·3
4659·35				21455·8
4659·55	4			21454·9
4659·88	5			21453·4
4659·98				21452·9
4660·18	4			21452·0
4660·54	5			21450·3
4660·67	4			21449·7
4660·81	4	1·38		21449·1
4661·20	5	1·39		21447·3
4661·34	4			21446·7
4661·54	4			21445·7
4661·91	5			21444·0
4662·08	4			21443·2
4662·22	4			21442·6
4662·61	5			21440·8
4662·78	4			21440·0
4662·96	5			21439·2
4663·33	5			21437·5
4663·51	4			21436·7
4663·66	5			21436·0
4664·07	5			21434·1
4661·30	4			21433·0
4664·45	4			21432·3
4664·81	5			21430·7
4665·05	4			21429·6
4665·24	4			21428·7
4665·62	5			21427·0
4665·85	4			21425·9
4666·03	4			21425·1
4666·38	5			21423·5
4666·67	4			21422·1
4666·85	4			21421·3
4667·22	5			21419·6
4667·50	4			21418·3
4667 67	4			21417·6
4668·04	5	1·39	6·4	21415·9
4668·36	4			21414·4
4668·54	4			21413·6
4668·86*	5			21412·1
4669 22	4			21410·4
4669·40	4			21409·5
4669·72	5			21408·2
4669·79				21407·8
4670·12	4			21406·3
4670·29	4			21405·5
4670·62	5			21404·0
4670·72				21403·6
4671·02	4			21402·2
4671·21	4			21401·3
4671·53	5			21399·9
4671·61				21399·5
4671·97	2			21397·8
4672·15	12			21397·0
4672·48				21395·5
4672·62				21394·9
4672·97	4			21393·3
4673·14	4			21392·5
4673·43	3s			21391·2
4673·58	4			21390·5
4673·80	2			21389·5
4673·91	3			22389·0
4674·09	4			21388·1
4674·38	5			21386·8
4674·53	4			21386·1
4674·71	3			21385·3
4674·90	4		6·4	21384·4
4675·15*	3		6·3	21383·4
4675·37	3			21382·4
4675·51	4			21381·7
4675·65	3			21381·1
4675·91	4 b			21379·9
4676·37	4			21377·8
4676·52	2			21377·1
4676·66	2			21376·5
4676·81	2			21375·8
4676·96	4			21375·1
4677·10	4 b			21374·5
4677·20	4			21374·0
4677·38	4			21373·2
4677·50	5 b			21372·6
4677·61	3			21372·1
4677·84	2			21371·1
4677·95	5			21370·6
4678·03				21370·2
4678·24	3			21369·3
4678·41	5			21368·5
4678·55	5			21367·8
4678·74	2			21367·0
4678·91	2			21366·2
4679·23	3			21364·7

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4679·51	4s	1·39	6·3	21363·5	4691·18	3	1·39	6·3	21310·3
4679·89	2			21361·7	4691·40	3			21309·3
4680·04	2			21361·0	4691·71	3			21307·9
4680·21	2			21360·3	4691·84	3			21307·3
4680·38	3			21359·5	4692·06	3			21306·3
4680·56	4s			21358·7	4692·27	5			21305·3
4680·71	3			21358·0	4692·45	5 b			21304·5
4680·68	3			21356·7	4692·58	4			21303·9
4681·13	2			21356·1	4692·67	4			21303·5
4681·30	3 b			21355·3	4693·11	4			21301·5
4681·66*	4			21353·6	4693·33	4			21300·5
4681·90	2			21352·5	4693·55	4 b			21299·5
4682·31*	3			21350·7	4693·67	3			21299·0
4682·52*	3			21349·7	4693·98	4			21297·6
4682·73	5s			21348·7	4694·20	3			21296·6
4682·85	5s			21348·2	4694·29	3			21296·2
4683·08	3			21347·1	4694·40	3			21295·7
4683·37	4			21345·8	4694·78	12n			21293·9
4683·52	4s			21345·2	4695·30				21291·6
4683·69	4			21344·4	4695·59	2			21290·3
4683·86	2 b			21343·3	4695·80				21289·3
4684·00	4			21343·0	4696·01	6b	1·39		21288·4
4684·17	3			21342·2	4696·30		1·40		21287·1
4684·37	4			21341·3	4696·43	2			21286·5
4684·66	5			21340·0	4696·56	2			21285·9
4684·85	4 b			21339·1	4696·73	5			21285·1
4685·01	5			21338·4	4696·97	6			21284·0
4685·11	4			21337·9	4697·37	3 b			21282·2
4685·32	3			21337·0	4697·52	3			21281·5
4685·51	3			21336·1	4697·65	6			21280·9
4685·69*	3			21335·3	4697·90	6			21279·8
4685·84	2			21334·6	4698·07	2			21279·0
4686·03	4s			21333·7	4698·20	2			21278·4
4686·18	4s b			21333·0	4698·34	3			21277·8
4686·72	3			21330·6	4698·57	2			21276·8
4686·91	2			21329·7	4698·70	4			21276·2
4687·07	4			21329·0	4698·90	6 b			21275·3
4687·35	3 b			21327·7	4699·00	7			21274·8
4687·48	4s			21327·1	4699·30	2			21273·5
4687·66	2			21326·3	4699·45	2			21272·8
4687·83	4			21325·5	4699·69	3			21271·7
4688·23	5			21323·7	4699·87	5			21270·9
4688·56	5			21322·2	4700·01	2			21270·2
4688·69	4			21321·6	4700·17	4			21269·5
4688·97	4			21320·3	4700·35	4			21268·7
4689·19	3			21319·3	4700·44	2			21268·3
4689·32	4			21318·7	4700·68	3			21267·2
4689·49				21318·0	4700·89	5			21268·3
4689·77	6			21316·7	4701·04	5			21265·6
4689·95	5			21315·9	4701·18	3			21265·0
4690·11	4			21315·2	4701·30	3			21264·4
4690·19				21314·8	4701·56	4			21263·2
4690·58	3			21313·0	4701·74	4			21262·4
4690·80	4			21312·0	4701·91	4 b			21261·7
4691·00	5			21311·1	4702·01	4			21261·2

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4702·17	2	1·40	6·3	21260·5	4713·55	4	1·40	6·3	21209·1
4702·27				21260·0	4713·84	4			21207·8
4702·53	3			21258·8	4714·06	4			21206·9
4702·70	4b			21258·1	4714·19	5			21206·2
4702·97	6b			21256·9	4714·37	3			21205·4
4703·64	3			21253·8	4714·44				21205·1
4703·80	4			21253·1	4714·69	2			21204·0
4704·02	4			21252·1	4714·88	6			21203·1
4704·14	4			21251·6	4715·07	4			21202·3
4704·39	5b			21250·4	4715·45	6			21200·6
4704·60	3			21249·5	4715·74	4			21199·3
4704·75	3			21248·8	4716·02	5			21198·0
4704·91	3			21248·1	4716·40	4 b			21196·3
4705·07	4			21247·4	4716·68	5			21195·1
4705·16				21247·0	4716·87	4			21194·2
4705·35	2			21246·1	4717·04	3			21193·4
4705·51	3			21245·4	4717·31	3			21192·2
4705·62	3			21244·9	4717·49	5			21191·4
4705·89	7			21243·7	4718·00	6			21189·1
4706·01				21243·1	4718·11	6			21188·6
4706·17	7			21242·4	4718·33	6			21187·6
4706·26				21242·0	4718·47	6			21187·0
4706·57	3			21240·6	4718·80	3			21185·5
4706·77	4			21239·7	4719·00	2			21184·6
4706·88	3			21239·2	4719·12	2			21184·1
4707·10	2			21238·2	4719·29	7			21183·3
4707·26	7†b			21237·5	4719·41				21182·8
4707·53				21236·3	4719·68	4			21181·6
4707·88	3			21234·7	4719·89	3			21180·6
4708·10	3			21233·7	4720·05	3			21179·9
4708·25	3			21233·0	4720·21	2			21179·2
4708·38	3			21232·4	4720·32	4			21178·7
4708·51	4			21231·8	4720·61	3			21177·4
4708·77	6			21230·7	4720·76	4			21176·7
4708·94	6			21229·9	4721·02	3			21175·6
4709·23	4			21228·6	4721·17	2⊙			21174·9
4709·45	6			21227·3	4721·27	4 b			21174·4
4709·62	6			21226·8	4721·38	2			21173·9
4709·99	2			21225·2	4721·59	4			21173·0
4710·21*	6b			21224·2	4721·89	4			21171·7
4710·44	4			21223·1	4722·08	6			21170·8
4710·61	b			21222·1	4722·26	4 b			21170·0
4710·80	4			21221·5	4722·36	4			21169·5
4710·97	3			21220·7	4722·56*	3			21168·7
4711·08	2			21220·3	4722·80	2			21167·3
4711·47	3			21218·5	4723·01	5			21166·6
4711·69	5			21217·5	4723·26	5			21165·5
4711·81	8			21217·0	4723·47	4			21164·3
4711·98	8			21216·2	4723·59	2			21164·0
4712·27	3			21214·9	4723·78*	2			21163·2
4712·47	4			21214·0	4723·99	3			21162·2
4712·57	3			21213·5	4724·09	3			21161·8
4712·97	6			21211·7	4724·27	4			21161·0
4713·16	5			21210·9	4724·52	2 b			21159·9
4713·35				21210·0	4724·63	4			21159·4

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4724·86	4	1·40	6·3	21158·3	4736·80	2	1·41	6·3	21105·0
4725·13	4 b			21157·1	4736·94	5			21104·4
4725·30	4			21156·4	4737·20	4			21103·2
4725·61	4			21155·0	4737·38	4			21102·4
4725·72	2			21154·5	4737·61	5			21101·4
4726·03	5			21153·1	4737·86	4			21100·3
4726·24*	6b			21152·2	4738·17	4			21098·9
4726·59	4			21150·6	4738·50	5			21097·4
4726·83	3			21149·5	4738·75	5			21096·3
4727·20	4			21148·9	4739·00	4			21095·2
4727·40	6			21147·0	4739·17	4			21094·4
4727·81	2			21145·1	4739·42	5			21093·3
4728;01	4			21144·2	4739·78	5			21091·7
4728·17	5			21143·5	4739·99	4 b			21090·8
4728·41	5			21142·5	4740·35	4			21088·2
4728·67	3			21141·3	4740·67	4			21087·8
4728·81	5			21140·7	4740·75	4			21087·4
4728·97	4			21139·9	4740·93	4 b			21086·6
4729·10	4			21139·4	4741·26	5			21085·1
4729·29	5			21138·5	4741·57	3			21083·8
4729·43	5n			21137·9	4741·73	3			21083·0
4729·81*	3			21136·2	4742·06	3			21081·6
4730·03*	3			21135·2	4742·22	3			21080·9
4730·22	3			21134·4	4742·37	4			21080·2
4730·41	5			21133·5	4742·56	6s			21079·4
4730·58	4			21132·8	4442·79	4			21078·3
4730·68	4			21132·3	4742·99	4			21077·4
4730·88	3	1·40		21131·4	4743·16	4			21076·7
4731·15	2	1·41		21130·2	4743·37	3			21075·8
4731·37	3			21129·2	4743·65	4			21074·5
4731·52	5			21128·6	4743·85	5			21073·6
4731·69	5			21127·8	4743·94				21073·2
4731·82	5			21127·2	4744·14	5			21072·3
4732·08	3			21126·0	4744·45	4			21071·0
4732·37	2			21124·8	4744·70	4			21069·8
4732·62	4			21123·6	4744·95	6			21068·7
4732·81	4			21122·8	4745·17				21068·0
4732·96	2			21122·1	4745·57	4			21066·0
4733·11	3			21121·5	4745·83	4			21064·8
4733·35	5			21120·4	4446·11	4			21063·6
4733·46	5			21119·9	4746·30	4			21062·7
4733·77	4			21118·5	4746·53	4			21061·7
4733·97	2			21117·6	4746·64	4			21061·2
4734·14	3			21116·9	4746·95	4			21059·9
4734·35	3			21115·9	4747·12	3			21059·1
4734·62	3			21114·7	4747·23	4			21058·6
4734·83	4			21113·8	4747·47	4			21057·5
4734·96	4			21113·2	4747·64	4			21056·8
4735·13	6 b			21112·4	4747·85	5			21055·9
4735·35	5			21111·5	4747·96				21055·4
4735·71	2			21109·8	4748·18	3		6·3	21054·4
4735·94	7			21108·8	4748·33	4		6·2	21053·8
4736·08				21108·2	4748·57	3			21052·8
4736·32	5			21107·1	4748·88	4			21051·4
4736·53	3			21106·2	4749·02	2			21050·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4749·19	6	1·41	6·2	21050·0	4761·02	3	1·41	6·2	20997·7
4749·51	2			21048·6	4761·28	3			20996·5
4749·74	4			21047·6	4761·52	4s b			20999·5
4750·01	4			21046·4	4761·80				20994·3
4750·26	3			21045·3	4762·07	5bn			20993·1
4750·42	2			21044·6	4762·34	3			20991·9
4750·56	5			21043·9	4762·51	5$\odot$			20991·1
4750·84	4			21042·7	4762·69	5			20990·3
4751·13	4			21041·4	4762·81				20989·8
4751·33	3			21040·5	4763·02*	5			20988·9
4751·81	4			21038·4	4763·60	4b^{r}			20986·3
4752·09	3			21037·2	4763·85	3			20985·2
4752·27	7			21036·4	4764·02	4			20984·5
4752·53	7			21035·2	4764·25	3			20983·5
4752·75	2			21034·2	4764·46				20982·5
4753·00	2			21033·1	4764·64	4s b			20981·7
4753·23	5			21032·1	4764·78	2			20981·1
4753·36				21031·5	4764·93	3			20980·5
4753·54	5			21030·7	4765·14	3			20979·5
4753·75	2			21029·8	4765·40	3 b			20978·4
4753·99	4			21028·8	4765·54	3			20977·8
4754·10	2			21028·3	4765·78	3			20976·7
4754·52	5			21026·4	4765·95	3	1·41		20976·0
4754·68	5			21025·7	4766·30	4	1·42		20974·4
4754·90	5			21024·7	4766·53	6$\odot$			20973·4
4755·09	3			21023·9	4766·75	6			20972·4
4755·31	3			21022·9	4766·95	4n			20971·6
4755·48	2			21022·2	4767·29	2			20970·1
4755·38	[illegible]			21021·7	4767·40	2			20969·6
4755·73	3			21021·1	4767·54	2			20969·0
4755·85	2			21020·5	4767·73	3			20968·1
4756·00	3			21019·9	4767·99	2			20967·0
4756·12	3			21019·3	4768·18	2			20966·2
4756·30	4			21018·5	4768·33	4			20965·5
4756·52	4			21017·6	4768·59	4			20964·4
4756·82	4			21016·2	4768·71	2			20963·0
4756·97	3			21015·6	4769·03	3			20962·4
4757·11	3			21015·0	4769·16	2			20961·9
4757·30	3			21014·1	4769·35	2			20961·0
4757·47	4			21013·4	4769·48	3			20960·4
4757·54				21013·1	4769·90	2			20958·6
4757·75	4$\odot$			21012·1	4770·19	4			20957·3
4757·89	4			21011·5	4770·53	3			20955·8
4758·12	4			21010·5	4770·66	3			20955·3
4758·33	5$\odot$			21009·6	4770·93				20954·1
4758·56	5			21008·6	4771·14	4			20953·1
4758·95	5			21008·6	4771·39	2			20952·0
4759·05	5			21006·4	4771·56	4			20951·3
4759·37	5			21005·0	4771·67	4			20950·8
4759·50	5			21004·4	4771·85	4			20950·0
4759·83	3			21002·9	4772·10	4			20949·9
4759·99	3			21002·2	4772·37	3			20947·7
4760·32	6			21000·8	4772·76	2			20946·0
4760·57	5			20999·7	4773·08	3 b			20944·6
4760·78	5			20998·8	4773·23	3			20944·0

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4773·39	3 } b	1·42	6·2	20943·3	4788·36	4	1·42	6·2	20877·8
4773·57*	4 }			20942·5	4788·56	2			20876·9
4773·86	3			20941·2	4788·90	4			20875·4
4774·08	5			20940·2	4789·23	5			20874·0
4774·35	4			20939·1	4789·60	4			20872·4
4774·68	4			20937·6	4789·89	2			20871·1
4774·93*	5			20936·5	4790·16	3			20869·9
4775·18 }	4			20935·4	4790·45 }	b†			20868·7
4775·27 }				20935·0	4790·73 }				20867·4
4775·60	4			20933·6	4790·94 }	2b			20866·5
4776·03	5			20931·7	4791·13 }				20865·7
4776·31	5			20930·5	4791·27	2			20865·1
4776·55	3			20929·4	4791·49	2			20864·1
4776·84	3			20928·1	4791·61	3			20863·6
4777·05	2			20927·2	4791·93	2			20862·2
4777·26	2			20926·3	4792·24	4			20860·9
4777·51	5			20925·2	4792·56	4			20859·5
4777·79	4			20924·0	4792·71	3			20858·8
4777·95	4			20923·3	4792·91	2			20857·9
4778·25	5			20922·0	4793·08	2			20857·2
4778·56	3			20920·6	4793·26	2			20856·4
4778·75	2			20919·8	4793·65	3			20854·7
4778·95	3			20918·9	4793·83	2			20853·9
4779·25	5			20917·6	4793·98	2			20853·3
4779·61	4			20916·0	4794·39	5 } b			20851·5
4779·73	4			20915·5	4794·77	5 }			20849·9
4779·95	4			20914·5	4795·01	3			20848·8
4780·04	3			20914·1	4795·48	2			20846·8
4780·24	4			20913·2	4795·63	2			20846·0
4780·61	3			20911·6	4795·78	2			20845·5
4780·85	4			20910·6	4796·03	4			20844·4
4781·68	4			20906·9	4796·33	5			20843·1
4781·96	5b			20905·7	4796·53	3			20842·2
4782·26	5b			20904·4	4796·68	2			20841·5
4782·76	2			20902·2	4796·88	2			20840·7
4783·25	3			20900·1	4797·17	2			20839·4
4783·76*	3			20897·9	4797·41	2			20838·4
4783·96	3			20897·0	4797·62	2			20837·5
4784·14	2			20896·2	4798·02	2			20835·7
4784·28	4			20895·6	4798·26	3			20834·7
4784·47	3			20895·8	4798·45	2			20833·9
4784·61	3			20894·1	4798·60 }	2†			20833·2
4784·88	3			20893·0	4798·83 }				20832·2
4785·25	4			20891·5	4799·05	3			20831·2
4785·56	2			20890·0	4799·31	3			20828·4
4785·78	2			20889·0	4799·71	3			20830·1
4786·04	2			20887·9	4800·18 }	3			20826·3
4786·35	3			20886·5	4800·27 }				20826·0
4786·63	3			20885·3	4800·56	3			20814·7
4786·74	2			20884·8	4800·74	2			20813·9
4786·92	3			20884·1	4800·90	3			20813·2
4787·07	3			20883·4	4801·00	2			20813·8
4787·44	3			20881·8	4801·24	3			20811·8
4787·94	3			20879·6	4801·44	3			20810·9
4788·07	3			20879·0	4801·67	2			20809·9

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4801·77	2	1·42	6·2	20809·5	4817·49	3	1·43	6·2	20751·5
4802·02	2	1·43		20808·4	4817·67	2			20750·7
4802·16	3			20807·8	4818·40*	3			20747·6
4802·50	3			20806·3	4818·59	2			20746·8
4802·72	3			20805·3	4818·78	3			20745·9
4803·16*	4			20803·4	4818·93	3			20745·3
4803·42*	3			20802·3	4819·10	2			20744·6
4803·68*	3			20801·2	4819·33	3			20743·2
4804·09	3			20799·4	4819·50	3			20742·8
4804·47	4			20797·7	4819·72	2			20741·9
4804·68	2			20797·8	4820·48	3		6·2	20738·6
4804·88	2			20796·0	4820·79	2		6·1	20737·3
4805·15	2			20794·8	4820·96	3			20736·6
4805·36	3			20793·9	4821·24	2			20735·4
4805·71	4			20792·4	4821·46	2			20734·5
4805·89	2			20791·6	4821·59	2			20733·9
4806·11	2			20790·6	4821·87	2			20732·7
4806·26	2			20790·0	4822·09	2			20731·8
4806·48	3			20789·0	4822·42	3			20730·4
4806·66	4			20798·3	4822·26	4			20729·3
4806·99	2			20796·8	4823·13*	3			20727·2
4807·61	3			20794·2	4824·23	3			20722·6
4807·70	3			20793·8	4824·60	2			20721·0
4807·95	4			20792·7	4824·79	2			20720·2
4808·40	4			20790·7	4825·06	2			20719·0
4808·49				20790·3	4825·25	2			20718·2
4808·73	3			20789·3	4825·49	2			20717·2
4808·97	3			20788·3	4826·02	2			20714·9
4809·26	2			20787·0	4826·22	2			20714·0
4809·80*	5s			20784·7	4826·48	2			20712·9
4810·16*	5s			20783·1	4826·65	2			20712·2
4810·53	3			20781·5	4826·85	2			20711·3
4810·92	3			20779·8	4826·98	2			20710·8
4811·27	4			20778·3	4827·38	3			20709·1
4811·56	4			20777·1	4827·75	2			20707·5
4811·77	2			20776·2	4828·09	2			20706·0
4812·02	2			20775·1	4828·23	2			20705·4
4812·30	4			20773·9	4828·44	2			20704·5
4812·39	2			20773·5	4828·64	2			20703·7
4812·55	4			20772·8	4829·10	4n			20701·7
4812·85	3			20771·5	4830·40	2			20696·1
4812·99	2			20770·9	4830·60	2			20695·3
4813·47	3n			20768·8	4831·33	2			20692·1
4813·79	3			20767·4	4831·47	2			20691·5
4813·94	2			20766·8	4831·77	3			20690·2
4814·21	3			20765·6	4832·16	2			20688·6
4814·45	4			20764·6	4832·36	3			20687·7
4814·66	2			20763·7	4832·94	2			20685·2
4814·84	4			20762·9	4833·51	3			20682·8
4815·17	3			20761·5	4833·99	2			20680·7
4815·61*	3			20759·6	4834·43*	2			20678·9
4816·01	4			20757·9	4834·90	3			20676·8
4816·30	3n			20756·6	4835·75	3			20673·2
4816·74	4			20754·7	4835·94	3			20672·4
4817·15	4			20753·0	4836·22	2	1·43		20671·2

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency
4836·44	3	1·44	6·1	20670·3	4848·65	3	1·44	6·1	20618·2
4836·72	2			20669·1	4848·81	4			20617·5
4836·91	2			20668·2	4848·91	4			20617·1
4837·25	2n			20666·8	4849·14	3			20616·1
4837·64	2n			20665·1	4849·32	4			20615·4
4838·00	3n			20663·6	4849·41	4			20615·0
4838·45	3n			20661·7	4849·62	3			20614·1
4838·96	3			20659·5	4849·79	4			20613·3
4839·94	2			20655·3	4849·91	4			20612·8
4840·24	3bn			20654·0	4850·12	3			20611·9
4840·44	3⊙			20653·2	4850·33	4			20611·1
4840·76	2			20651·8	4850·49	4			20610·4
4841·04	2⊙			20650·6	4850·66	3			20609·6
4841·44	2			20649·9	4850·88	4			20608·7
4841·80	2			20647·4	4851·00	4			20608·2
					4851·19	3			20607·4
Group C	4842–5041				4851·43	4			20606·4
					4851·57	4			20605·8
4842·44	12			20644·6	4851·79	4			20604·8
4842 85				20642·9	4852·01	4			20603·9
4842·98				20642·2	4852·17	4			20603·2
4843·13				20641·7	4852·34	4			20602·5
4843·31				20640·9	4852·58	4			20601·5
4843·49				20640·2	4852·76	4			20600·7
4843·73	5			20639·1	4852·93	4			20600·0
4843·92	5			20638·3	4853·22	4			20598·8
4844·17	5			20637·3	4853·39	4			20598·1
4844·37	4			20736·4	4853·56	5			20597·3
4844·45	4			20636·1	4853·83	4			20596·2
4844·65	4			20635·2	4854·01	4			20595·4
4844·72	4			20634·9	4854·17	5			20594·7
4844·94	4			20634·0	4854·49	4			20593 4
4845·04	4			20633·6	4854·68	4			20592·6
4845·26	4			20632·6	4854·86	5			20591·8
4845·34	4			20632·3	4855·14	4			20590·6
4845·57	4			20631·3	4855·30	4			20590·9
4845·64	4			20631·0	4855·50	5			20589·1
4845·89	4			20629·9	4855·90	5			20587·4
4846·00	4			20629·5	4856·05	4			20586·8
4846·26	4			20628·4	4856·22	5			20586·0
4846·37	4			20627·9	4856·55	5			20584·6
4846·65	4			20626·7	4856·73	4			20583·9
4846·77	4			20626·2	4856·89	5			20583·2
4846·94	2			20625·5	4857·28	5			20581·5
4847·07	4			20624·9	4857·45	4			20580·8
4847·17	4			20624·5	4857·57	5			20580·3
4847·34	2			20623·8	4857·97	5	1·44	6·1	20578·6
4847·48	4			20623·2	4858·18	4			20577·7
4847·57	4			20622·8	4858·30	5			20577·2
4847·80	3			20621·8	4858·76	5			20575·3
4847·92	4			20621·3	4858·94	4			20574·5
4848·01	4			20620·9	4859·04	5			20574·1
4848·22	3			20620·0	4859·52	5			20572·1
4848·35	4			20619·5	4859·70	5			20571·3
4848·44	4			20619·1	4859·82	5			20570·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4860·29	5	1·44	6·1	20568·8	4872·93	3	1·44	6·1	20515·4
4860·50	5			20567·9	4873·11	3	1·45		20514·7
4860·59	5			20567·5	4873·35	6			20513·7
4861·12	5			20565·3	4873·50*	6			20513·0
4861·33	4			20564·4	4873·72	2			20512·1
4861·41	5			20564·1	4873·90	3			20511·3
4861·92	4			20561·9	4874·03	3			20510·8
4862·14	6			20561·0	4874·20	2			20510·1
4862·24	4			20560·5	4874·41	6s			20509·2
4862·77	6			20558·3	4874·54	4 b			20508·7
4862·97	4			20557·5	4874·63	4			20508·3
4863·09	6			20557·0	4874·93	3			20507·0
4863·64	4			20554·6	4875·11	3			20506·3
4863·82	5			20553·9	4875·27	2			20505·6
4863·94	4			20553·4	4875·46	6			20504·8
4864·50	4			20551·0	4875·58	4			20504·3
4864·70	5			20550·1	4875·71	4			20503·7
4864·79	4			20549·8	4875·80	2			20503·3
4865·43	4			20547·1	4876·05	3			20502·3
4865·61	5			20546·3	4876·25	3			20501·5
4865·67	4			20546·0	4876·39	2			20501·5
4866·33	4			20543·3	4876·56	6			20500·1
4866·54	8			20542·4	4876·64	6			20499·8
4866·80	2			20541·3	4876·84	5			20499·0
4866·93	2			20540·7	4876·96	3			20498·5
4867·06	2			20540·2	4877·26	3			20497·2
4867·26	4			20539·3	4877·45	2			20496·4
4867·48	7			20538·4	4877·64	5			20495·6
4867·78	2†			20537·1	4877·75	6			20495·2
4868·03				20536·1	4877·98	4			20494·2
4868·05	4			20536·0	4878·20	3			20493·3
4868·42	7			20534·4	4878·54	3			20491·8
4868·63	2			20533·6	4878·79	6			20490·6
4868·77	2			20533·0	4878·90	6			20490·1
4868·88	2			20532·5	4879·15	5			20489·3
4869·08	2			20531·7	4879·35	3			20488·4
4869·26	4			20530·9	4879·54				20487·6
4869·37	4			20530·4	4879·91	6			20486·1
4869·45	6			20530·1	4880·07	7			20485·4
4869·69	3			20529·1	4880·32	4			20484·4
4869·82	3			20528·5	4880·56	3			20483·3
4870·06	2			20527·5	4880·72	3b			20482·7
4870·25	5			20526·7	4880·90				20481·9
4870·46	6			20525·8	4881·10	5			20481·1
4870·77	3			20524·5	4881·25	7			20480·5
4870·91	3			20523·9	4881·51	6			20479·4
4871·24	6			20522·6	4881·96	3n			20477·5
4871·48	6⊙			20521·5	4882·24	8			20476·3
4871·60	2			20521·0	4882·43	8			20475·5
4871·74	2			20520·4	4882·71	5			20474·3
4872·02	2			20519·3	4882·96	3bn			20473·3
4872·29	6⊙			20518·1	4883·45	6			20471·2
4872·46	6			20517·4	4883·60	5			20470·6
4872·61	2			20516·8	4883·70	5			20470·2
4872·77	2			20516·1	4883·98	4			20469·0

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4884·25	3	1·45	6·1	20467·9	4897·95	5	1·45	6·0	20410·7
4884·48	3			20466·9	4898·17	3			20409·8
4884·66	5s			20466·1	4898·52	3			20408·3
4884·84	4s			20465·4	4898·79	3			20407·2
4884·96	3			20464·9	4899·16	6			20405·7
4885·03	2			20464·6	4899·37	6			20404·8
4885·26	5⊙			20463·6	4899·94	3			20402·4
4885·87	6			20461·1	4900·24	5			20401·2
4886·08	6			20460·2	4900·34	2			20400·7
4886·22	5			20459·6	4900·59	5			20399·7
4886·51	4⊙			20458·4	4900·79	5			20398·9
4886·73	2			20457·5	4901·32	3			20396·7
4886·95	3			20456·6	4901·45	4			20396·1
4887·11	4			20455·9	4901·74	3			20394·9
4887·31	4			20455·0	4902·03	4			20393·7
4887·52	4			20454·2	4902·25	4			20392·8
4887·79	6			20453·1	4902·40	3			20392·2
4887·85	2			20452·8	4902·53	3			20391·6
4888·41	6			20450·4	4902·76	2			20390·7
4888·57	6s b			20449·8	4903·03	3			20389·5
4888·85				20448·6	4903·24	2			20388·7
4889·11	4s b			20447·5	4903·54	6			20387·4
4889·32				20446·6	4903·72	6			20386·7
4889·47	b			20446·0	4904·49	3			20383·5
4889·68	5s			20445·1	4904·67	2			20382·7
4889·85	5			20444·4	4904·84	6			20382·0
4890·14	4			20443·2	4905·04	6			20381·2
4890·44	6			20442·0	4905·22	6			20380·4
4891·00	5			20439·6	4905·81	2			20378·0
4891·18	5			20438·9	4906·07	6			28376·9
4891·30	4			20438·4	4906·31	3			20375·9
4891·53				20437·4	4906·52	6s			20375·0
4891·77	4			20436·4	4906·71	6s			20374·2
4892·32	6			20434·1	4906·95	3	1·45		20373·3
4892·50	4			20433·3	4907·15	4	1·46		20372·4
4892·87	3			20431·8	4907·55*	3			20370·8
4893·14	4			20430·7	4907·89	2⊙			20369·4
4893·32	3			20429·9	4908·03	4s			20368·8
4893·64	5			20428·6	4908·21	6b			20368·0
4893·83	4			20427·8	4908·67	3n			20366·1
4894·10	3			20426·7	4909·18	3			20364·0
4894·29	4			20425·9	4909·34	3			20363·3
4894·56	3		6·1	20424·7	4909·55	6⊙			20362·5
4895·00	7		6·0	20423·0	4909·80	4			20361·4
4895·20	7			20422·2	4909·93	2			20360·9
4895·65	4			20420·3	4910·55	3			20358·3
4895·93	3			20419·1	4910·72	4⊙			20357·6
4896·08	3			20418·5	4911·11	5			20356·0
4896·24	2			20417·8	4911·36	4⊙			20355·0
4896·37	5			20417·3	4911·82	3			20353·0
4896·58	5			20416·4	4912·00	3			20352·3
4897·07	5			20414·4	4912·41	3			20350·6
4897·27	3			20413·5	4912·74	5			20349·2
4897·36	4			20413·2	4912·94	4			20348·4
4897·75	5			20411·5	4913·06	3			20347·9

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4913·24	3	1·46	6·0	20347·2	4930·18	2	1·46	6·0	20277·2
4913·45	3			20346·3	4930·44	2			20276·2
4913·76	3			20345·0	4931·03	2			20273·7
4914·09	3			20343·6	4931·27	2			20272·7
4914·35	6			20342·6	4931·41	4			20272·2
4914·55	5			20341·7	4931·63	4			20271·3
4914·79	2			20340·7	4932·02	3			20269·7
4915·08	2			20339·5	4932·37	2			20268·2
4915·93	4			20336·0	4932·56	3			20267·5
4916·14	4			20335·2	4932·79	3			20266·5
4916·44	2			20333·9	4933·18	4			20264·9
4916·65	2			20333·0	4933·44	4			20263·8
4916·94	3			20331·8	4933·89	2			20262·0
4917·15	3			20331·0	4934·07	2			20261·2
4917·39	2			20330·0	4935·02	4			20257·3
4917·58	4			20329·2	4935·28	4			20256·3
4917·81	5			20328·2	4935·42	2			20255·7
4918·28	3			20326·3	4935·57	2			20255·1
4918·47	3			20325·5	4935·80	4			20254·1
4918·83	2			20324·0	4936·23	2			20252·4
4919·25	5			20322·3	4936·48	2			20251·3
4919·47	5			20321·4	4936·85	4			20249·8
4919·62	3			20320·8	4937·10	5			20248·8
4919·83	3			20319·9	4937·34	3			20247·8
4920·23	2			20318·2	4937·72	3			20246·3
4920·58	2			20316·8	4938·71	5			20242·2
4920·92	5			20315·4	4938·97	5			20241·1
4921·15	6			20314·4	4939·26	2			20239·9
4921·62	3			20312·5	4939·62	2			20238·5
4921·98	2			20311·0	4940·31	3			20235·6
4922·37	3			20309·4	4940·58	4			20234·5
4922·61	6			20308·4	4940·85	4			20233·4
4922·86	4			20307·4	4941·18	3			20232·1
4923·41	2			20305·1	4941·61	3			20230·3
4923·74	3			20303·8	4941·93	3	1·46		20229·0
4923·98	3			20302·8	4942·17	3	1·47		20228·0
4924·33	4			20301·3	4942·48	4			20226·8
4924·57	4			20300·3	4942·76	4			20225·6
4924·71	3			20299·8	4943·18	2			20223·9
4924·84	3			20299·2	4943·53	3			20222·5
4925·15	3			20297·9	4943·79	2			20221·4
4925·39	3			20297·0	4944·43	4			20218·8
4925·67	2			20295·8	4944·69	4			20217·7
4926·07	4			20294·2	4945·16	3			20215·8
4926·31	4			20293·2	4945·47	3			20214·5
4926·47	2			20292·5	4946·33	4			20211·0
4926·59	2			20292·0	4946·64	4			20209·7
4926·83	3			20291·0	4946·83	2			20209·9
4927·46	2			20288·4	4947·08	4n			20207·9
4927·81	4			20287·0	4947·55	3			20206·0
4928·05	5			20286·0	4948·34	4			20202·8
4928·30	4			20285·0	4948·56	4			20201·9
4929·26	2			20282·0	4948·80	3			20200·9
4929·57	5			20280·7	4949·19	3			20199·3
4929·83	5			20279·7	4949·60	3			20197·7

Aluminium Oxide (Arc Spectrum)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
4950·32	5	1·47	6·0	20194·7	4978·03	4	1·48	5·9	20082·4
4950·56	5			20193·7	4978·38	4			20081·0
4951·24	3			20191·0	4980·09	2			20074·1
4951·63	2			20189·4	4980·30	3			20073·2
4951·94	3			20188·1	4980·47	2			20072·5
4952·29	4			20186·7	4980·66	3			20071·8
4952·59	4			20185·4	4982·17	2			20065·7
4953·71	3			20180·9	4982·53	3			20064·2
4953·94	2			20179·9	4982·89	3			20062·8
4954·33	4			20178·4	4984·16	2			20057·7
4954·64	4			20177·1	4984·54	2			20056·1
4955·42	4			20173·9	4984·86	3			20054·8
4955·77	2			20172·5	4985·19	3			20053·5
4956·39	4			20170·0	4986·22	2			20049·4
4956·67	4			20168·8	4986·55	2			20048·0
4957·24	2			20166·5	4987·18	3			20045·5
4958·47	4			20161·5	4987·55	3			20044·0
4958·77	4			20160·3	4988·30	2			20041·0
4959·03	2			20159·2	4988·67	2			20039·5
4959·37	2			20157·8	4989·62	3			20035·7
4959·72	2			20156·4	4989·90	3			20034·6
4960·55	4			20153·1	4990·35	2			20032·8
4960·86	4			20151·8	4990·75	2			20031·2
4961·23	2			20150·3	4991·90	3			20026·5
4961·55	2			20149·0	4992·27	3			20025·1
4961·86	2			20147·7	4992·50	2			20024·1
4962·32	2			20145·9	4992·85	2			20022·7
4962·69	5			20144·4	4994·15	3			20017·5
4963·00	5			20143·1	4994·62	3			20015·6
4963·38	2			20141·6	4996·68	3			20007·4
4964·11	2			20138·6	4997·07	3			20005·8
4964·57	2			20136·7	4999·12	2			19997·6
4964·81	3			20135·8	4999·45	2			19996·3
4965·13	3 ⊙			20134·5	5001·17	2			19989·4
4966·48	2			20129·0	5001·57	3			19987·8
4966·80	3			20127·7	5001·94	3			19986·3
4966·97	3			20127·0	5003·34	2			19980·7
4967·27	3			20125·8	5003·77	2			19979·0
4968·32	2			20121·5	5004·06	3			19977·9
4968·73	2			20119·9	5004·41	3			19976·5
4969·17	3			20118·1	5005·56	2			19971·9
4969·49	3			20116·8	5006·00	2			19970·1
4970·30	2		6·0	20113·5	5006·54	3			19968·0
4970·62	2		5·9	20112·3	5006·91	3			19966·5
4971·20	2			20110·0	5007·87	2			19962·7
4971·38	3			20109·2	5008·27	2			19961·1
4971·71	3			20107·9	5009·06	3			19957·9
4972·24	2			20105·8	5009·43	3			19956·4
4972·57	2			20104·4	5010·10	2			19953·8
4973·58	4			20100·3	5010·49	2			19952·2
4973·92	4			20098·9	5011·59	3			19947·8
4974·24	2			20097·7	5011·94	3			19946·4
4974·58	2			20096·3	5012·38	2			19944·7
4975·82	4			20091·3	5012·80	2	1·49	5·9	19943·0
4976·13	4	1·47		20090·0	5014·12	2			19937·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
5014·50	2	1·48	5·9	19936·3	5085·38	2	1·51	5·8	19658·4
5014·67	2			19935·6	5085·56	2			19657·7
5015·12	2			19933·8	5085·83	2			19656·7
5016·73	2			19927·4	5086·01	2			19656·0
5017·00	2			19926·3	5086·31	2			19654·8
5017·08	2			19926·0	5086·47	2			19654·2
5017·45	2			19924·5	5086·78	2			19653·0
5019·29	2			19917·2	5086·97	2			19652·3
5019·41	2			19916·8	5087·29	2			19651·0
5019·67	2			19915·7	5087·46	2			19650·4
5019·79	2			19915·2	5087·81	2			19649·0
5021·94 }	3			19906·7	5087·98	2			19648·4
5022·34 }				19905·1	5088·33	2			19647·0
5024·54 }	3			19896·4	5088·53	2			19646·2
5024·96 }				19884·8	5088·88	2			19644·9
5027·21 }	2			19885·8	5089·08	2			19644·1
5027·62 }				19884·2	5089·27	2			19643·4
5029·86 }	2			19875·4	5089·45	2			19642·7
5030·32 }				19873·5	5089·63	2			19642·0
5032·55 }	2			19864·7	5089·81	2			19641·3
5033·05 }				19862·7	5090·01	2			19640·5
5035·30 }	2			19863·9	5090·24	2			19639·6
5035·76 }				19862·1	5090·43	2			19638·9
5038·07 }	3			19843·0	5090·63	2			19638·1
5038·50 }				19841·3	5090·84	2			19637·3
5040·88 }	3			19831·9	5091·01	2			19636·7
5041·26 }				19830·4	5091·22	2			19635·9
					5091·47	2			19634·9
Group λ	5079–52	10			5091·64	2			19634·2
					5091·89	3			19633·3
5079·52	8	1·50	5·8	19681·1	5092·09	3			19632·5
5079·95	2			19679·4	5092·25	3			19631·9
5080·11	2	1·50		19678·8	5092·52	3			19630·8
5080·20	2	1·51		19678·5	5092·76	3			19629·9
5080·44	2			19677·5	5092·92	3			19629·3
5080·65	2			19676·7	5093·20	3			19628·2
5080·84	2			19676·0	5093·43	3			19627·3
5081·05	2			19675·2	5093·58	3			19626·8
5082·11				19671·1	5093·90	3			19625·5
5082·23				19670·6	5094·12	3			19624·7
5082·41				19669·9	5094·25	3			19624·2
5082·54				19669·4	5094·59	3			19622·9
5082·71	2			19668·7	5094·82	3			19622·0
5082·87	2			19668·1	5094·94	3			19621·5
5083·06	2			19667·4	5095·29	2			19620·2
5083·21	2			19666·8	5095·54	4			19619·2
5083·40	2			19666·1	5095·66	3			19618·7
5083·75	2			19664·7	5096·02	2			19617·3
5083·91	2			19664·1	5096·30	4			19616·3
5084·14	2			19663·2	5096·41	2			19615·8
5084·30	2			19662·6	5096·79	2			19614·4
5084·54	2			19661·7	5097·05	4⊙			19613·4
5084·70	2			19661·0	5097·16	2⊙			19613·0
5084·93	2			19660·1	5097·58	3			19611·3
5085·11	2			19659·4	5097·84	5			19610·3

Aluminium Oxide (Arc Spectrum)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency
5098·35	2	1·51	5·8	19608·4	5111·27	2	1·51	5·8	19558·8
5098·62	5			19607·5	5111·52	4			19557·8
5099·15	2			19605·3	5111·69	2			19557·2
5099·38	5			19604·4	5112·05				19555·8
5100·00	2			19602·0	5112·17	5			19555·4
5100·25	5			19601·1	5112·28				19554·9
5100·79	2			19599·0	5112·59	4			19553·8
5101·07	5			19597·9	5112·81	2			19552·9
5101·67	2			19595·6	5113·21	5			19551·4
5101·92	4			19594·7	5113·37	5			19550·8
5102·32	12			19592·1	5113·79	3			19549·2
5102·84	6			19591·1	5114·00	2			19548·4
5103·06	2			19590·3	5114·25	2			19547·4
5103·23	2			19589·6	5114·42	5			19546·8
5103·41	3			19588·9	5114·65	2	1·51		19545·9
5103·61	4			19588·2	5115·02	4	1·52		19544·5
5103·77	4			19587·6	5115·29	3			19543·4
5104·03	2			19586·6	5115·50	2			19542·6
5104·24				19585·8	5115·68	3			19541·9
5104·36				19585·3	5115·91	2			19541·1
5104·49				19584·8	5116·34	5			19539·4
5104·64	3			19584·2	5116·60	5			19538·4
5104·91	2			19583·2	5116·98	5			19537·0
5105·05	2			19582·6	5117·26	2			19535·9
5105·18	2			19582·1	5117·50	2			19535·0
5105·35	3			19581·5	5117·69	5			19535·3
5105·53	3			19580·8	5117·98	2			19533·2
5105·80	2			19579·8	5118·11	2			19532·7
5105·99	2			19579·0	5118·38	4			19531·6
5106·18	2			19578·3	5118·62	4			19530·7
5106·32	4			19577·8	5118·79	2			19530·1
5106·50	4			19577·1	5119·15	4br			19528·7
5106·68	2			19576·4	5119·42	2			19527·7
5106·88	2			19575·8	5119·77	4			19526·3
5107·08	2			19574·9	5119·90	5			19525·8
5107·25	4			19574·2	5120·15	3			19524·9
5107·44	4			19573·5	5120·51	4			19523·5
5107·68	2			19572·6	5120·64				19523·0
5107·85	3			19571·9	5120·90	4			19522·0
5108·10	2			19570·9	5121·09	3			19521·3
5108·22	4			19570·5	5121·28	4			19520·6
5108·32	2			19570·1	5121·41	4			19520·1
5108·52	3			19569·3	5121·69	3			19519·0
5108·70	3			19568·6	5122·06	5			19517·6
5108·97	2			19567·6	5122·21	5			19517·0
5109·17	4			19566·8	5122·50	3			19515·9
5109·32	2			19566·3	5122·86	4			19514·5
5109·47	3			19565·7	5122·98	4			19514·1
5109·64	2			19565·0	5123·26	3			19513·0
5109·91	2			19564·0	5123·47	9			19512·2
5110·15	4			19563·1	5123·57				19511·8
5110·28	2			19562·6	5123·79*	6			19511·0
5110·46	3			19561·9	5124·15	3			19509·6
5110·95	2			19560·0	5124·44	4s			19508·5
5111·15	4			19559·3	5124·64	5s			19507·8

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency
		$\lambda+$	$\frac{1}{\lambda}-$				$\lambda+$	$\frac{1}{\lambda}-$	
5125·03	4s	1·52	5·8	19506·3	5137·78	2	1·52	5·8	19457·9
5125·28	3			19505·3	5138·00	2			19457·0
5125·47	3			19504·6	5138·32	3			19455·8
5125·68	3			19503·8	5138·67	4			19454·5
5125·89	3			19503·0	5138·85	4			19453·8
5126·20	3			19501·8	5139·06	3			19453·0
5126·30	3			19501·4	5139·40	3			19451·7
5126·47	2			19500·8	5139·74	4			19450·4
5126·60	2			19500·3	5139·92	3			19449·7
5126·77	2			19499·7	5140·19	3			19448·7
5126·92	3			19499·1	5140·46	4			19447·7
5127·14	4			19498·2	5140·83	5			19446·3
5127·62*	2			19496·4	5141·02	3			19445·6
5127·91	3			19495·3	5141·18	2			19444·0
5128·17	3			19494·3	5141·60	5			19443·4
5128·34	3			19493·7	5141·84	2			19442·5
5128·54	2			19492·9	5142·12	2			19441·4
5128·71	2			19492·3	5142·33	2			19440·6
5128·83	2			19491·8	5142·53	2			19439·9
5128·95	2			19491·4	5142·74	2			19439·1
5129·15	3			19490·6	5143·08	6			19437·8
5129·46	3			19489·4	5143·27	8			19437·1
5129·71	3			19488·5	5143·48	3			19436·3
5129·95	3			19487·6	5143·89	4			19434·7
5130·17	3			19486·7	5144·20	4			19433·6
5130·43	3			19485·7	5144·38	4			19432·9
5130·69	4			19484·8	5144·52	2			19432·4
5130·89	4			19484·0	5144·77	4			19431·4
5131·12	2			19483·1	5145·04*	2			19430·4
5131·38	3			19482·1	5145·26*	2			19429·6
5131·61	3			19481·3	5145·48	5 } b			19428·7
5131·82*	3			19480·5	5145·74				19427·7
5132·04	3			19479·6	5145·95*	4			19427·0
5132·40	3			19478·3	5146·25	6			19425·8
5132·57	2			19477·6	5146·48	3			19425·0
5132·71	2			19477·1	5146·73	4			19424·0
5132·90	3			19476·4	5146·92	2			19423·3
5133·42*	4			19474·4	5147·10	2			19422·6
5133·57	3			19473·8	5147·28	2			19421·9
5133·73	3			19473·2	5147·45	} b			19421·3
5133·99	4			19472·2	5147·71	4			19420·3
5134·27	2			19471·2	5147·93	6			19419·5
5134·53	4			19470·2	5148·07	2			19419·0
5134·67	4			19469·6	5148·43	3			19417·6
5134·91	3			19468·7	5148·82	5	1·52		19416·1
5135·13	4			19467·9	5148·97	4	1·53		19415·6
5135·49	4			19466·6	5149·14	4			19414·9
5135·74	4			19465·6	5149·26	4			19414·5
5136·06	3			19464·4	5149·70	3			19412·8
5136·28	2			19463·5	5150·12	3			19411·2
5136·55	2			19462·5	5150·60	3			19409·4
5136·75	3			19461·8	5150·77	2			19408·8
5137·07	3			19460·5	5151·34	2			19406·6
5137·39	3			19459·3	5151·55	4			19405·8
5137·60	5			19458·5	5151·68	2			19405·3

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
5152·38*	3	1·53	5·8	19402·7	5165·97	4b	1·53	5·7	19351·7
5152·58	5			19401·9	5166·26	3			19350·7
5152·85	3			19400·9	5166·72	4			19348·9
5153·04	4			19400·2	5166·89	2			19348·3
5153·60	4b^r			19498·1	5167·10*	2			19347·5
5153·85	4			19397·2	5168·32	4			19342·9
5153·99	2			19396·6	5168·79	4			19341·2
5154·11	2			19396·2	5169·19	5			19339·7
5154·30	3			19395·5	5169·49	2			19338·6
5154·50	3			19394·7	5169·78	4			19337·5
5154·80	2			19393·6	5170·22	4			19335·8
5155·16	4 } b			19392·2	5170·37				19335·3
5155·42*	6			19391·3	5170·67	5n			19334·1
5155·98	4			19388·1	5170·93	2			19333·2
5156·25	2			19388·1	5171·30	2			19331·8
5156·45	6			19387·4	5171·57	4			19330·8
5156·77	} b			19386·2	5172·09	2			19328·8
5157·02*	4			19385·2	5172·28	2			19327·1
5157·25	4			19384·4	5173·05	2			19325·2
5157·47	3			19383·5	5173·26	2			19324·7
5157·71	3			19382·6	5173·41	2			19323·9
5157·84	3			19382·2	5173·57	2			19323·3
5157·99	3			19381·6	5173·71	2			19322·8
5158·25	4b			19380·6	5174·03	4			19321·6
5158·53				19379·6	5174·32	3			19320·5
5158·71	2		5·8	19378·9	5174·63	3			19319·3
5159·06	4		5·7	19377·7	5174·79	2			19318·7
5159·32	4			19376·7	5175·13	3			19317·5
5159·53	2			19375·9	5175·27	4			19317·0
5159·71	2			19375·2	5175·53	4b			19316·0
5159·90	2			19374·5	5175·80	4			19315·0
5160·07*	2			19373·9	5175·94	2			19314·5
5160·35	5b			19372·8	5176·29	4			19313·2
5160·60	5			19371·9	5176·50	4b			19312·4
5160·70	3			19371·5	5176·62	2			19311·9
5161·00				19370·4	5176·80	2			19311·3
5161·18	4b			19369·7	5177·23	5b			19309·6
5161·41				19368·8	5177·51	5b			19318·6
5161·67	5			19367·9	5177·78	5b			19317·6
5161·80	5			19367·5	5178·06	3			19316·6
5162·05	6			19366·4	5178·18	4			19316·1
5162·77	5b			19363·7	5178·44*	4			19315·1
5163·19	2			19362·2	5179·04	5			19312·9
5163·36	5b			19361·5	5179·17	2			19312·4
5163·56				19360·8	5179·40	5b			19311·6
5163·66	2			19360·4	5179·72	5			19310·4
5163·80	2			19359·9	5179·94	2			19309·5
5163·94	2			19359·4	5180·24	4bn			19308·4
5164·09	2			19358·8	5180·50	3			19297·6
5164·33*	3			19357·9	5180·97	4			19295·7
5164·60*	4			19356·9	5181·27	5			19294·6
5164·88	4s			19355·8	5181·59	3			19293·4
5165·07	3			19355·1	5181·71	3			19292·9
5165·35	2			19354·1	5181·99	3s			19291·9
5165·67	3b			19352·9	5182·31	3			19290·7

ALUMINIUM OXIDE (ARC SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency
5182·51	3	1·53	5·7	19290·0	5196·32	3	1·54	5·7	19238·7
5182·92	3 b			19288·4	5196·74	3			19236·1
5183·36	3	1·53		19286·8	5197·14	2			19235·6
5184·14	3	1·54		19283·9	5197·30	3			19235·1
5184·31	3			19283·3	5197·67*	4b			19233·7
5184·50	3			19282·6	5198·04	2			19232·3
5184·65	3			19282·0	5198·49	2			19230·7
5184·77	3			19281·6	5198·75	2			19229·7
5185·03	3			19280·6	5198·96*	2			19228·9
5185·30	2			19279·6	5199·37	2			19227·4
5185·54				19278·7	5199·77	3			19225·9
5185·88	3 b			19277·4	5200·14	3			19224·5
5186·17				19276·4	5200·31	3n			19223·9
5186·46	3			19275·3	5200·55	2			19223·0
5186·63	4			19274·6	5200·79	2			19222·1
5186·99	4			19273·3	5201·01	2			19221·3
5187·38	5			19271·9	5201·15	2			19220·8
5187·76	3			19270·4	5201·43	3n			19219·8
5188·09	4			19269·2	5201·61*	n			19219·1
5188·42				19268·0	520 ·82	2			19218·3
5189·07	3			19261·6	5202·12	2			19217·2
5189·28	3			19264·8	5202·34	2			19216·4
5189·47	3			19264·1	5202·80	3			19214·7
5189·81	3			19262·8	5202·91				19214·3
5190·01	2			19262·1	5203·20	2			19213·2
5190·22	3			19261·3	5203·40	3			19212·5
5190·43	3			19260·5	5303·61	3			19211·7
5190·73	5			19259·4	5203·79	2			19211·1
5191·10	4			19258·0	5203·92	2			19210·6
5191·21				19257·6	5204·09	2			19210·0
5191·51				19256·5	5204·22	2			19209·5
5192·03	3 b			19254·6	5204·48	3			19208·5
5192·40	5			19253·2	5205·19	3			19205·9
5192·52	5⊙			19252·8	5205·40	2			19205·1
5192·79	5b			19251·8	5205·61	2			19204·3
5193·08	4			19250·7	5206·55	3			19200·9
5193·62	2			19248·7	5206·75	3			19200·1
5193·98*	2			19247·3	5206·97	3			19199·3
5194·16	3			19246·7	5207·62*	3			19196·9
5194·33	3			19246·1	5207·92	2			19195·8
5194·56	3			19245·2	5208·09	2			19194·2
5194·83	3			19244·2	5208·39	2			19194·1
5195·21	2n			19242·8	5208·83	3			19192·5
5195·40	2			19242·1	5209·46	4bn			19190·1
5195·62	2			19241·3	5209·98	3			19198·2
5196·06	3			19239·6	5210·28	3			19197·1

Spottiswoode & Co. Printers, New-street Square, London.

APPENDIX E.

AIR (SPARK SPECTRUM).

Neovius ('Bihang till K. Svenska Vet. Akad. Handlingar,' Bd. xvii. 1891).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
5768·5 N	3	5768·3 Th.	17330
5747·5 N	3	5746·4 „	17394
5731·5 N	1	5727·4 „	17442
5712·3 N	6	5712·3 „	17501
5686·3 N	5	5686·7 „	17581
5679·8 N	12	5679·4 „	17601
5676·0 N	5	5675·9 „	17613
5667·1 N	9	5667·4 „	17640
5593·0§	<1		17874
5566·0 N	<1		17961
5551·0 N	3	5550·1 „	18009
5543·0 N	3	5542·3 „	18035
5535·2 N	6	5535·3 „	18061
5530·4 N	3	5531·1 „	18077
5526·4 N	1		18090
5496·6 N	6	5496·2 „	18188
5479·8*N	5b	5480·1 „	18243
5462·8 N	5	5462·7 „	18300
5453·8*N	5	5454·1 „	18330
5432·3 N	<1		18403
5411·1 N	1		18475
5401·0 N	<1		18510
5393·5 N	1		18535
5379·0§N	<1		18585
5373·2§N	<1		18605
5367·8§N	<1		18624
5356·9 N	1		18661
5351·7 N	1	5352·1 „	18680
5339·7 N	1	5340·5 „	18722
5329·1 N	1		18759
5320·6 N	1	5321·0 „	18789
5312·0	<1		18819
5289·0§	<1		18901
5281·8 N	1		18927
5250·7 N	<1		19038
5213·8§	<1		19174
5206·7 O	<2	5206 H.	19200
5200·9 N	1		19221
5190·8*NO	1	5190·6	19259
5185·0*N	1	5185·6	19281

A

Air (Spark Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
5180·0 N	5	5179·1	19299
5176·7*NO	1		19312
5172·5*N	1	5172·8	19327
5161·0 O	1	5164 H.	19370
5074·0 N	1	5072 „	19703
5063·0 N	<1		19745
5045·7 N	7	5045·7 Th.	19813
5025·8 N	3	5025·7 Th.	19891
5023·3 N	3	5022·95 T. & H.	19901
5016·5 N	3	5016·8 Th.	19928
5011·0*N	5	5011·06 T. & H.	19950
5007·8 N	5	5007·5 Th.	19963
5005·7 N	10	5006·0 „	19978
5002·7 N	10	5003·0 „	19983
4994·9 N	6	4994·4 „	20014
4991·2 N	1		20022
4987·6 N	4	4987·7 „	20044
4965·3 N	<1		20134
4955·2 O	1	4955·16 T. & H.	20167
4942·7*	3	4942·0 Th.	20226
4935·1*N	2	4932 H.	20257
4925·2 O	2	4925·3 „	20298
4915·0 N	<1	4915·12 T. & H.	20340
4907·3 O	2	4907·67 „	20372
4896·5 N	4	4896·6 Th.	20417
4891·5 O	1	4891·27 T. & H.	20438
4879·7 N	2	4879·90 „	20487
4872·0 O	1	4873 H.	20519
4867·0 N	1	4867 „	20540
4861·0*N	3b	4859 „	20566
4856·3 O	1	4854 „	20586
4848·0 N	1	4850 „	20621
4810·8 N	3		20780
4806·2 N	3		20800
4803·6 N	7	4804·7 Th.	20811
4794·2 N	3	See Iron	20853
4788·5 N	6	4788·27 T. & H.	20877
4780·1 N	5	4780·1 Th.	20914
4774·6 N	3	4775·07 T. & H.	20938
4768·2§	<1		20966
4765·1 N	2		20980
4752·0 O	2b		21038
4742·1 O	1		21081
4736·1 N	3		21108
4726·8 N	3		21150
4721·9 N	1		21172
4718·5 N	3		21187
4712·5 N	<1	4712·87? T & H.	21213
4710·1 O	5	4710·20 „	21225
4709·7 N	<2		21226
4705·6 O	6	4705·42 „	21245
4705·0 N	<2		21248
4699·7 O	6	4699.40 „	21272
4698·0 N	<1n		21279
4696·0*NO	<2b		21288
4692·0 O	<1		21307
4676·5 O	6	4676·4 „	21377
4674·8 N	4	4674·9 „	21385

AIR (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)		Oscillation Frequency in Vacuo
4670·9*N	3n			21403
4668·1 N	3			21416
4661·9 O	5	4662·6	Th.	21444
4658·1 N	1	4658·05	T. & H.	21462
4654·8 N	3	4654·85	„	21477
4651·0 NO	4	4651·02	„	21494
4649 2 O	8	4649·25	„	21503
4643·4 N	9	4643·45	„	21529
4641·9 O	9	4641·90	„	21536
4640·5 N	1	4640·75	„	21543
4639·0 O	5	4639·00	„	21550
4634·0 N	3	4634·00	„	21573
4630·9 N	12	4630·73	„	21588
4622·0 N	9	4621·42	„	21629
4614·2 N	8	4614·05	„	21666
4609·6 NO	2	4609 45	„	21687
4607·2 N	8	4607·20	„	21699
4601·3 N	9	4601·37	„	21726
4596·6 O	6	4596·20	„	21749
4591·1*O	7b	{ 4590·95 4590·00	„ „	21776
4579·2 N	2	4578·55 ?	„	21831
4565·0 N	2			21899
4552·6 N	3n			21959
4545·1 N	3	4544·50 ?	„	21995
4535·1 N	<1			22043
4530·3 N	6b			22067
4523·0 N	1b			22103
4518·0 N	<1			22127
4514·8 N	3			22143
4511·6 N	1	4511·85	„	22158
4507·7 N	6	4507·72	„	22178
4491·2 O	<1b			22259
4488·0 N	<2	4487·94	„	22275
4482·1 N	1	4481·87	„	22309
4478·0 N	3	4477·87	„	22325
4475·0 N	1b			22340
4469·6 O	3n	4469·50	„	22367
4467·8 O	4	4468·02	„	22376
4465·4*O	4	4465·40	„	22388
4460·0 N	3	4459·90	„	22415
4452·7 O	3	4452·40	„	22452
4447·3*NO [1]	12	4447·09	„	22479
4443·2 O	1	4443·0	„	22500
4434·4 N	3	4434·27	„	22544
4432·0 N	3b	4431·90	„	22556
4430·4 N	3	4430·04	„	22566
4426·1 N	5	4426·00	„	22587
4417·3 O	9	4417·17	„	22632
4415·0 O	9	4415·00	„	22643
4401·3 N	3n	4401·22	„	22714
4396·1 O	3n	4396·30	„	22741
4392·4 N	<1			22760
4385·8 N	<1	4385·40	„	22794
4379·7 N	3	4379·70	„	22826
4375·2 N	1			22849
4371·4*N	3	4371·40	„	22869
4369·7 O	3	4369·60	„	22887

AIR (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
4368·8 O	3		22883
4367·0 O	6	4366·92 T. & H.	22892
4362·1 N	<1		22918
4356·7 N	1b	4356·62 ,,	22946
4351·6 O	6	4351·40 ,,	22973
4349·4 O	8	4349·30 ,,	22985
4347·9*NO	6	{4347·94 ,, 4347·47 ,,	22993
4345·8 O	6	4345·52 ,,	23004
4341·8 N	1b		23025
4337·1 O	3		23050
4331·7*NO	3n	{4332·40 ,, 4331·20 ,,	23079
4328·5 O	1	4328·42 ,,	23096
4327·3 O	3	4327 60 ,,	23102
4325·9 O	3	4325·90 ,,	23110
4319·9 O	4	4319·50 ,,	23142
4317·1 O	4	4317·20 ,,	23157
4303·4 O	1b	4303·80 ,,	23230
4292·0 O	1b	4291·90 ? ,,	23292
4282·9*NO	1b	4282·40 ,,	23342
4275·2 NO	1	4274·82 ,,	23384
4266·7 N	<2	4266 32 ,,	23430
4254·1 O	1b	4253·42 ,,	23500
4251·0 N	1		23517
4242·1 N	6b	4241·92 ,,	23566
4237·0 N	6b	4236·67 ,,	23595
4228·9 N	6b	4228·52 ,,	23640
4225·1 N	1		23661
4223·4 N	4	4223·17 ,,	23671
4222·2 N	1		23677
4219·2 N	<1		23694
4215 6 N	1b	4217·0 H. & A.	23714
4211·4 N	1		23738
4207·2 N	1b	4206·92 T. & H.	23762
{4198·2 N	4b	4199·22 ,,	23813
{4196·5 N	4s		23822
4193·2 N	1	4193·77 ,,	23841
4190·0 O	7	4190·00 ,,	23859
4185·8 O	7	4185·32 ,,	23883
4180·3 N	<2n	4179·92 T. & H.	23915
4176·7 N	5b	4177·4 H. & A.	23936
4172·0 N	<2	4172·12 T. & H.	23962
4169·5 O	3	4169·47 ,,	23977
4167·2 N	1	4166·72 ,,	23990
4158·4 N	1	4158·6 H. & A.	24041
4156·7 O	3	4156·79 T. & H.	24050
4153·7 O	6	4153·57 ,,	24068
4152·0 N	5	4151·92 ,,	24078
4145·9*NO	7	4145·87 ,,	24113
4143·8 O	4		24125
4142·8 N	<1		24131
4142·4 O	1		24133
4140·7 N	<1		24143
4137·8 N	1b	4137·7 Th.	24164
4134·2 N	6	4133·79 T. & H.	24181
4132·9 O	6	4132·82 ,,	24189
4129·3 O	1		24210

AIR (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
4124·0 NO	5	4123·82 T. & H.	24241
4121·8 O	4	4121·56 „	24254
4120·6 O	6	4120·46 „	24261
4119·4 NO	9	4119·36 „	24268
4116·8 N	<1		24283
4114·2 O	1		24299
4112·4 O	3	4112·16 „	24309
4111·0 O	2	4111·01 „	24318
4105·2 O	4b	4105·21 „	24352
4103·4*N	4b	4103·3 H. & A.	24363
4097·3*NO	8b	4097·49 T. & H.	24399
4093·1 O	4	4093·09 „	24416
4089·3 O	1b	4088·64 „	24447
4085·3 O	3	4085·24 „	24470
4081·7 N	1		24492
4079·1 O	3	4078·83 „	24508
4076·3 O	9	4076·19 „	24525
4072·4 O	9	4072·34 „	24548
4070·1 O	8	4070·24 „	24562
4063 7 N	1	4064·1 H. & A.	24601
4056 8 N	1b	4057·9 „	24643
4041·5 N	6b	4041·39 T. & H.	24736
4035·2 N	5b	4035·34 „	24774
4025·9 N	2b	4026·2 H. & A.	24832
4019·4	<1		24871
4014·3 N	1		24903
4011·1	<1	4011·34 T. & H.	24923
3995·2 N	12	3995·10 „	25022
3982·9 O	4	3982·97 „	25101
3973·5 O	<2	3973·60 „	25159
3968·6 N	1	3968·70 „	25191
3961·6 O	1		25234
3956·1 N	7	3956·17	25270
3954·6 O	5	3954·85	25272
3947·5 O	3		25325
3945·3 O	4	3945·3 H. & A.	25339
3939·7 N	<2b	3939·80 T. & H.	25375
3934·7 N	1b	3935·10 „	25400
3928·8	<2	3929·8 H. & A.	25445
3919·2*NO	10	3919·25 T. & H.	25507
3912·2 O	5	3912·30 „	25553
3909·2 N	1		25573
3907·8 O	1		25581
3898·9 O	1b		25640
3893·4 N	1b	3893·50 „	25676
3882·6 O	3	3882·45 „	25748
3875·9 O	1		25793
3864·7 O	3	3864·90 „	25867
3863·6 O	2	3863·80 „	25875
3861·7 N	3		25888
3860·5†	3		25896
3857·2 NO	4b	3857·40 „	25918
3851·6 O	2		25956
3850·6 N	3	3850·70 „	25962
3848·1 NO	1n		25979
3845·3 N	3		25998
3844·0 O	1		26007
3843·1*N	<2	3843·00 „	26013

Air (Spark Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
3839·8 N	< 2b	3839·28 T. & H.	26035
3831·0 N	1b	3830·60 „	26095
3824·4 O	1n	3824·4 H. & A.	26140
3809·9 N	< 1	*	26239
3804·3 O	1n	3804·4 „	26278
3782·3 N	< 1	3782·7 „	26431
3779·1 O	< 1		26447
3770·9 N	1	3772·1 „	26511
3764·6 O	< 1		26555
3759·9 O	1	3759·9 „	26588
3758·5 N	1		26598
3757·1 O	1		26608
3754·6 O	1n	3754·0 „	26626
3749·7 O	6	3749·80 T. & H.	26661
3744·4	< 1		26698
3741·3 O	< 1	3740·3 H. & A.	26721
3736·9 O	< 1		26752
3729·4 N	3		26806
3727·4 O	5	3727·0 „	26820
3712·9 O	3	3712·7 „	26925
3709·3 O	< 1		26951
3707·2 O	< 1		26966
3703·3 O	< 1	3702·4 „	26995

Trowbridge and Hutchins give also strong air-lines at 4816·60, 4802·37, 4782·62, 4694·15, 4638·90, 4583·15.

* double. § probable impurity. Th. Thalén.
T. & H. Trowbridge and Hutchins. H. Huggins.
[1] Intensity of oxygen line 4. † Probably due to copper.

Copper (Arc Spectrum).

Kayser and Runge (‘Ueber die Spectren der Elemente,’ Pt. V. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*5782·30	0·03	8s	5782·5 Neovius§§ 5782·4 Th.	1·70	5·1	17289·0
5732·53	0·03	1s		1·69	„	17439·2
5700·39	0·03	8s	5700·8 „ 5701·8 „	1·68	5·2	17537·5
5646·93	0·30	1n		1·67	„	17703·5
*5555·16	0·10	4s		1·64	5·3	17996·0
5536·06	0·40	4b		„	„	18058·1
5432·30	0·15	2n		1·61	5·4	18393·9
5408·56	0·15	2n		1·60	5·5	18483·7
*5391·89	0·15	4n		1·59	„	18540·9
5360·22	0·05	2s		„	„	18650·8
5355·20	0·20	2n		1·58	5·6	18667·8
5352·87	0·05	2s		„	„	18676·0
5292·75	0·05	6s	5293·0 „ 5293·1 „	1·57	„	18888·2
*5250·78	0·15	2b		1·55	„	19039·2
5220·25	0·05	6s		„	5·7	19150·5
5218·45	0·10	10b'r 4*	5218·4 „ 5218·1 „	„	„	19157·1
5201·10	0·10	4b		1·54	„	19221·0

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$	
5158·53	0·15	1b			1·53	5·7	19379·7
5153·33	0·20	8nr 4*	5153·6 Neovius	5153·3 Th.	„	5·8	19399·1
5144·35	0·15	2b			1·52	„	19433·0
5105·75	0·05	8r	5105·9 „	5105·5 „	1·51	„	19580·0
5076·42	0 15	2b			1·50	„	19693·1
5034·48	0·15	1b			1·49	„	19857·2
			4955·8 „	4956·5 „			
4866·38	0·20	2n	4932·5 „	4933·4 „	1·44	6·1	20543·1
4794·23	0·20	2n	4911·0 „	4912·3 „	1·42	6·2	20852·2
4767·69	0·20	2n			„	„	20968·3
4704·77	0·05	8s	4703·2 „	4704·0 „	1·40	6·3	21248·7
4697·62	0·10	4n			1·39	„	21281·1
4674·98	0·10	6b			„	6·4	21384·1
4651·31	0·10	8s	4651·3 „	4651·5 „	1·38	„	21492·9
4642·78	0·15	2n			„	„	21532·4
4587·19	0·15	10n	4587·4 „		1·36	6·5	21793·3
4539·98	0·15	8br	4540·1 „		1·35	6·6	22019·9
4531·04	0·10	8b^{v}r 4†	4531·1 „		„	„	22063·4
4513·39	0·10	2b			1·34	„	22149·7
4509·60	0·05	4s	4509·9 „		„	„	22168·3
4507·62	0·20	6n			„	„	22178·1
4480·59	0·10	8b^{v}r 4†	4480·6 „		1·33	„	22311·9
4415·79	0·10	6b			1·32	6·7	22639·3
4397·42	0·15	1n			1·31	6·8	22733·8
4378·40	0·05	8r	4378·2 „		„	„	22832·6
4354·91	0·20	2n			1·30	6·9	22955·7
4336·17	0·10	2b			1·29	„	23054·9
4329·00	0·15	2n			„	„	23093·1
4275·32	0·05	8r	4275·3 „	4275·5 „	1·28	7·0	23383·1
4267·48	0·15	1b			1·27	„	23426·0
4259·63	0·10	6b			„	„	23469·2
4253·53	0·10	2b			„	„	23502·9
4249·21	0·05	4s	4249·4 „		„	„	23526·8
4242·42	0·10	2b	4242·7 „		„	„	23564·5
4231·20	0·10	1n			1·26	„	23627·0
4177·87	0·10	4b			1·25	7·1	23928·5
4123·38	0·10	2b			1·23	7·2	24244·7
4080·70	0·10	2n			1·22	7·3	24498·3
4073·28	0·15	2n			„	7·4	24542·8
4063·50	0·20	1n	4063·0 „		„	„	24601·9
4062·94	0·10	10b^{v} 5*			„	„	24605·3
4056·8	0·50	2b^{r}			„	„	24642·6
4022·83	0·10	10b^{v} 5*	4022·9 „		1·21	7·5	24850·6
4015·8	0·50	1b^{r}			1·20	„	24894·1
4010·96	0·20	2n			„	„	24924·2
4003·18	0·05	2s			„	„	24972·6
3925·40	0·05	2b			1·18	7·4	25467·7
3921·38	0·05	1b			1·18	7·7	25493·7
3899·43	0·10	1b			1·17		25637·1
‡3861·88	0·20	2b 5†			1·16	7·8	25887·3
3860·64	0·05	4b	3850·7 „				25894·6
3825·13	0·20	1b 5†			1·15	7·9	26135·0
3821·01	0·05	1b					26163·2
*3812·08	0·05	1b					26224·5
3805·33	0·05	2b			1·14		26271·0

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	$\frac{1}{\lambda}$−	
3771·96	0·05	4b		1·14	8·0	26503·4
3759·53	0·05	2b		1·13	8·1	26591·0
3741·32	0·05	4b		1·13		26720·4
3734·27	0·05	2b		1·13		26770·9
3712·05	0·05	2b		1·12		26931·2
3700·63	0·05	4b		,,	8·2	27014·2
3688·60	0·25	2n 6*	3686·6 Nevius	1·11		27102·4
3684·75	0·05	2b				27130·7
3676·97	0·05	2b				27188·1
3672·00	0·05	2b				27224·9
3665·85	0·05	2b			8·3	27270·5
3659·44	0·05	1b		1·10		27318·3
3656·90	0·05	1b				27337·3
3655·99	0·05	2				27344·1
3654·6	0·50	2n 6*				27354·5
3652·56	0·15	1n				27369·8
3648·52	0·05	1b				27400·1
3645·32	0·05	2b				27424·1
3641·79	0·05	2b				27451·7
3636·01	0·05	2b				27494·4
3627·39	0·05	4b			8·4	27559·6
3624·35	0·05	2b				27582·8
3621·33	0·05	4b		1·09		27605·8
3620·47	0·05	2b				27612·3
3614·31	0·05	1b				27659·4
3613·86	0·05	2b				27662·8
3602·11	0·10	6b	3599·7			27753·1
3599·20	0·10	6b	3597·7 H. & A.			27775·6
3546·54	0·05	1b		1·07	8·6	28187·9
3545·05	0·05	2b				28199·7
3533·84	0·05	4b				28289·2
3530·50	0·05	4				28316·0
3527·55	0·05	4b				28339·7
3524·31	0·10	2b	3524·4 ,,			28365·7
3520·07	0·05	4b				28399·9
3512·19	0·05	6b	3511·1 ,,	1·06	8·7	28463·6
3500·37	0·05	1b				28559·7
*3498·11	0·05	2b				28578·2
3488·89	0·05	1b				28653·7
§3487·62	0·05	1b				28664·1
3483·82	0·05	4b	3483·2			28695·4
3476·07	0·05	4b	3478·8 ?			28759·4
3454·76	0·05	4b	3455·8	1·05	8·8	28936·8
*3450·47	0·10	6b	3450·1			28970·3
3422·22	0·10	2n		1·04	8·9	29211·9
3420·20	0·05	1b				29229·2
3415·94	0·10	2b				29265·6
3413·41	0·05	2b				29287·3
3404·73	0·05	2b			9·0	29361·9
*3402·28	0·05	2b		1·03		29383·1
3396·39	0·05	1				29434·0
3395·52	0·05	2b				29441·6
3393·09	0·05	2				29462·7
3392·10	0·05	1				29471·3
3391·09	0·05	2n				29480·0

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	$\frac{1}{\lambda}-$	
3388·21	0·15	1b				29505·1
3384·88	0·05	2b				29534·1
3381·52	0·05	4b	3381·0 H. & A.	1·03	9·0	29563·5
3375·74	0·05	2b				29614·1
3365·46	0·10	4b		10·2	9·1	29704·5
3354·57	0·10	2b				29801·0
3349·38	0·10	4b				29847·2
3342·99	0·15	1n				29904·2
3337·95	0·05	4			9·2	29949·3
3329·68	0·05	4b		1·01		30023·7
3319·76	0·05	4b				30113·5
3317·28	0·05	4b				30136·0
3308·10	0·05	8b	3306·8 ,,			30219·6
3292·95	0·05	2			9·3	30358·6
3290·62	0·05	6n	3289·9 ,,	1·00		30380·1
3282·78	0·05	4b	3282·1 ,,			30452·7
3279·89	0·05	2	3280·1 ? ,,			30488·8
3277·35	0·05	1				30503·2
3274·06	0·03	10r	3273·2 ? ,,			30533·8
3266·05	0·05	2b	3265·2 ,,		9·4	30608·6
3247·65	0·03	10r	3246·9 ,,	0·99		30782·1
3243·21	0·05	4b	3243·9 ? ,,			30824·3
3235·74	0·05	4b	3233·4 ? ,,			30895·4
*3231·19	0·05	4b			9·5	30938·8
3226·61	0·05	2b		0·98		30982·8
3224·69	0·05	2b				31001·2
3223·47	0·05	2b				31013·0
3211·47	0·10	2				31128·9
3208·32	0·05	4				31159·5
3194·17	0·05	4		0·97	9·6	31297·4
3175·81	0·10	2n				31478·4
3169·73	0·05	4b				31538·8
3160·09	0·05	2			9·7	31635·0
3151·67	0·05	2b		0·96		31719·6
3146·93	0·05	4n				31767·3
*3142·47	0·05	4n				31812·4
3140·42	0·05	4b	3139·7 ? ,,			31833·2
3128·73	0·05	4b			9·8	31952·0
*3126·22	0·05	6b	3123·7 ,,			31977·7
*3120·53	0·05	2b		0·95		32036·0
3116·48	0·05	4b	3115·7 ,,			32077·7
3113·59	0·05	2b				32107·5
3108·64	0·05	6b	3107·4 ,,			32158·6
3099·97	0·05	4b	3097·8 ,,		9·9	32248·5
3094·07	0·05	2				32310·0
3073·89	0·05	4		0·94		32522·2
3070·86	0·10	1b			10·0	32554·2
3063·50	0·05	6				32632·4
3057·73	0·05	2				32694 0
3053·52	0·10	1b				32739·1
3052·73	0·10	1b				32747·6
3044·18	0·05	2b		0·93		32839·6
3036·17	0·05	6	3035·6 ,,		10·1	32926·1
*3030·33	0·10	2b				32989·6
3025·07	0·10	2b				33047·0

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
3022·65	0·10	4b	3023·4 H. & A.			33073·5
¶3021·73	0·10	2b				33083·5
3012·07	0·05	4b		0·92	10·2	33189·6
3010·92	0·05	4				33202·2
§2997·46	0·05	4				33351·4
2991·91	0·10	2n			10·3	33413·2
2986·10	0·10	4n				33468·7
2982·91	0·10	2n				33514·0
2979·52	0·10	2n				33552·2
2978·42	0·10	2n				33564·6
2961·25	0·10	6r	2959·6 „	0·91	10·4	33759·1
2951·38	0·10	4b			10·5	33872·0
¶2925·65	0·10	2b		0·90	10·6	34169·8
2924·99	0·10	1b				34187·5
2911·29	0·10	2				34338·4
2891·77	0·10	2n		0·89	10·7	34570·2
2890·97	0·10	2n				34579·8
2883·03	0·05	4	2882·4 „			34675·0
2879·04	0·20	2n	2877·4 „			34723·1
2875·66	0·20	2n			10·8	34763·8
2874·60	0·20	2n				34776·6
2792·07	0·10	2n		0·87	11·1	35804·6
2786·65	0·10	2n			11·2	35874·2
2783·67	0·10	2n		0·86		35912·6
2782·73	0·10	2n				35924·7
2769·37	0·20	1b				36097·1
2768·94	0·10	4b	2769·1 „			36103·7
2766·50	0·05	6b^{v}r	2766·2 „			36135·6
2751·86	0·20	1b			11·3	36328·1
‖2751·38	0·10	4n				36334·1
2724·04	0·10	4n	2721·2 „		11·4	36698·8
2715·67	0·10	4n	2713·1 „	0·85	11·5	36811·8
**2696·83	0·15	1b		0·83	11·6	37069·0
2687·85	0·15	1b	2688·8 „			37192·9
2681·16	0·15	1b				37285·7
2676·59	0·10	2b^{v}		0·84	11·7	37349·3
2672·24	0·15	2n		0·83		37410·1
*2651·78	0·10	2n			11·8	37698·7
2649·93	0·10	2n	2643·5 „			37725·0
2645·45	0·10	2n				37788·9
‡2635·02	0·10	4n		0·82	11·9	37938·5
2630·15	0·10	4n				38008·7
2627·49	0·10	2n				38047·2
2618·46	0·05	10r	2617·8 „		12·0	38178·4
2605·08	0·15	1n				38374·5
2580·52	0·05	2n		0·81	12·2	38739·7
2579·40	0·05	2n				38756·5
2570·76	0·05	2b				38886·8
2569·99	0·05	2n				38898·5
2567·17	0·05	1b^{v}	2565·3 ? „			38941·2
*2563·54	0·05	2b^{v}		0·80		38996·4
2553·38	0·05	1b^{v}	2552·2 „		12·3	39151·5
2547·67	0·05	2b^{v}	2544·6 „		12·4	39239·2
2494·97	0·05	2	2494·4 „	0·79	12·6	40068·0
2492·22	0·05	6r	2489·4 „			40112·3

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
2460·98	0·15	2b			0·78	12·8	40621·4
*2458·97	0·15	2b	2458·2 H. & A.				40654·6
2441·72	0·05	6r	2441·6 „		0·77	12·9	40941·8
*2406·82	0·15	8b^{r}	2404·3 „		0·76	13·2	41535·4
2400·18	0·05	4	2400·1 „				41650·3
2392·71	0·05	8b^{r}r	2392·2 „			13·3	41780·3
2369·97	0·05	6	2370·1 „	2369·9 T.&S.	0·75	13·4	42181·2
2363·28	0·05	1				13·5	42300·6
2356·68	0·05	4	2355·0 „	2356·7 „			42419·1
2345·59	0·05	2	2346·2 „	2346·2 „		13·6	42619·6
2319·70	0·05	4b			0·74	13·7	43095·3
2303·18	0·05	6	2303·8 „		0·73	13·9	43404·3
2294·44	0·05	2	2295·0 „	2294·4 „			43569·7
2293·92	0·05	10r	2294·6 „	2293·9 „			43579·6
††2288·19	0·05	4	2286·7 ? „	2286·7 ? „			43688·8
2282·20	0·15	1b	2279·6 „	2278·4 „		14·0	43803·4
2276·30	0·05	4	2277·0 „	2276·3 „			43916·9
2263·20	0·05	6r	2263·2 „	2263·2 „	0·72	14·1	44171·1
2260·58	0·05	4r					44222·3
‖2247·08	0·05	4b	2247·7 „	2247·0 „		14·2	44488·0
2244·36	0·05	1	2244·0 „				44541·9
2242·68	0·05	4	2243·5 „	2242·7 „			44575·3
2240·89	0·20	1b					44610·9
2238·52	0·05	2r					44658·2
2236·40	0·05	1r					44707·7
2230·16	0·05	8r	2230·0 „	2230·1 „			44825·6
2228·95	0·05	4	2229·1 „	2228·9 „			44850·0
2227·85	0·05	8r	2228·1 „	2227·8 „			44872·1
2225·77	0·05	6r	2226·0 „	2225·7 „			44914·1
2218·21	0·05	2	2218·5 „	2218·2 „			45067·2
2215·78	0·03	6r	2215·8 „	2215·7 „			45116·6
2214·68	0·03	8r	2214·1 „	2214·4 „			45139·1
2210·35	0·05	2	2210·8 „	2210·3 „			45227·5
2199·77	0·03	8r	2199·8 „	2199·8 „			45444·9
2192·35	0·05	2b	2192·0 „	2192·4 „	0·70	14·3	45598·9
2189·69	0·05	2	2189·6 „	2189·9 „			45654·3
2181·80	0·05	4r	2181·0 „	2181·8 „			45819·4
2179·41	0·10	4	2179·0 „	2179·5 „			45869·7
2178·97	0·05	6r	2178·0 „				45878·9
2171·88	0·20	1r					46028·8
2169·49	0·05	1					46079·5
2165·20	0·05	4r					46170·8
2149·05	0·05	2	2148·8 „	2149·2 „	0·69	14·4	46527·8
2136·05	0·05	2	2135·8 „	2136·1 „			46801·0
2126·11	0·05	2	2124·4 „	2126·2 „			47019·9
2123·06	0·05	2	2122·1 „	2123·1 „			47087·4
2112·19	0·05	1	2110·5 „	2112·2 „			47329·8
2104·88	0·05	4	2103·0 „	2104·9 „		14·5	47494·1
2085·40	0·10	1		2085·5 „			47937·9
2068·45	0·10	1		2068·3 „			48330·9
2061·77	0·10	1		2062·7 ?		14·6	48487·4
2055·08	0·10	1		2055·1 „			48645·3
2043·73	0·10	1		2075·0 ?			48915·5
2037·28	0·10	1		2037·3 „			49070·5
2035·90	0·10	1		2036·0 „			49103·7

COPPER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda+$	$\frac{1}{\lambda}-$	
2025·14	0·20	2r	2025·7 T. & S.			49364·7
2016·76	0·20	1	2016·9 „		14·7	49569·8
2015·53	0·20	1	2015·8 „			49600·0
2013·19	0·20	1	2013·2 „			49657·7
2009·31	0·20	1				49753·6
2003·50	0·20	1			14·8	49897·9
1999·68	0·20	1	1999·9 „			49993·2
1995·16	0·20	1				50106·5
1989·24	0·20	1	1989·4 „			50255·7
1979·26	0·20	1	1979·4 „			50509·1
1971·99	0·20	1	1970·4 „			50695·4
1956·83	0·20	1				51088·3
1943·88	0·20	1	1944·1 „			51428·7

The lines marked 4* 5* and 6* form a series of pairs, of which the oscillation frequency can be calculated from the formula $10^8\frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, where $a = 31591·6$ for the *first* line, and 31840·1 for the *second* line of the pair, $b = 131150$, $c = 1085060$. For those marked 4† and 5† the values are $a = 31591·6$ or 31840·1, $b = 124809$, $c = 440582$.

H. & A. Hartley and Adeney. T. & S. Trowbridge and Sabine.

* See Iron. §§ 'Bihang till K. Sv. Vet. Akad. Handl.,' xvii. p. 69. Neovius gives also lines at 4758·5, 4556·2, 4228·0, 4043·8. ‡ See Barium.

§ See Calcium. ¶ See Mercury. ‖ See Zinc.

** See Bismuth. †† See Cadmium.

The lines 2288·19 and 2009·31 appear to be due to arsenic.

SILVER (ARC SPECTRUM).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. VI. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda+$	$\frac{1}{\lambda}-$	
5667·72	0·20	4n		1·67	5·2	17638·6
5545·86	0·20	4bᵛ		1·64	5·3	18026·2
5471·72	0·05	6 4*	5471·0 Thalén	1·62	5·4	18270·4
5465·66	0·05	10r	5465·2 „	„	„	18290·6
5436·0	0·50	2n		1·61	5·5	18390·4
5333·5	0·50	2bᵛ		1·58	5·6	18743·8
5329·93	0·20	4bᵛ		„	„	18756·4
5276·4	0·50	1bᵛ		1·56	„	18946·7
5209·25	0·05	10r 4*		1·54	5·7	19190·9
*5123·85	0·20	1b		1·52	5·8	19510·8
4993·2	0·50	1n		1·48	5·9	20021·3
4888·46	0·10	2b		1·45	6·1	20450·2
4874·36	0·15	4bᵛ	4875·0 „	„	„	20509·4
4848·33	0·25	4n		1·44	„	20619·6
4797·0	0·50	2n		1·42	6·2	20840·2
4678·04	0·20	4b		1·39	6·3	21370·2

SILVER (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	1/λ −	
4668·70	0·10	8bᵛ 4†	4667·6 Thalén	1·39	6·4	21412·8
4616·03	0·20	4n		1·37	„	21657·2
*4556·13	0·20	4n		1·36	6·5	21942·0
*4476·29	0·10	6bᵛ 4†	4475·9 „	1·33	6·6	22333·3
4396·49	0·10	2b	4396·8 Lecoq de B.	1·31	6·8	22738·6
4379·45	0·15	4b		„	„	22827·1
4311·28	0·10	4bᵛ		1·29	6·9	23188·1
4212·1	1·00	8r 5*	4212·0 L. & D.	1·26	7·1	23734·0
4055·44	0·10	6r 5*	4053·9 „	1·22	7·4	24650·8
3991·9	1·00	1n		1·20	7·5	25043·2
*‡3981·87	0·15	5bᵛ 5†		1·19	7·6	25106·2
3943·1	0·50	1b		1·18	„	25353·2
3940·3	0·50	1b		„	„	25371·2
3914·47	0·20	2n		„	7·7	25538·5
3907·63	0·20	2n		1·17	„	25583·3
*3841·3	2·00	2bᵛ 5†		1·15	7·8	26025·1
3810·6	2·00	2n 6*		„	7·9	26234·7
3710·1	1·00	1n 6†		1·12	8·1	26945·4
3681·8	0·50	2bʳ 6*		1·11	8·2	27152·4
3624·0	0·50	1n 7*		1·10	8·4	27585·4
3557·3	0·50	1b		1·08	8·5	28102·7
3547·3	0·50	1b		1·07	8·6	28181·9
3542·67	0·15	4b	3542·2 H. & A.	„	„	28218·7
3505·43	0·20	1b 7*		1·06	8·7	28518·5
3501·90	0·10	4b		„	„	28547·2
3499·65	0·20	1b		„	„	28565·6
3383·00	0·03	10r	3383·5 „	1·03	9·0	29550·6
3327·82	0·05	1b		1·01	9·2	30040·5
3305·77	0·05	2b	3308·4 „	„	„	30240·9
3280·80	0·03	10r	3281·6 „	1·00	9·3	30471·1
3232·94	0·10	4b	3233·3 „	0·99	9·5	30922·1
3170·66	0·05	4b		0 97	9·7	31531·7
3130·09	0·05	6b	3129·4 „	0·96	9·8	31938·2
3099·19	0·05	2		0·95	9·9	32256·6
§2938·42	0·10	6b	2937·9 „	0·91	10·5	34021·4
*2824·50	0·10	8b		0·88	11·0	35393·5
2721·84	0·05	4	2721·3 „	0·85	11·5	36728·3
*2575·70	0·10	6b		0·81	12·2	38812·2
2447·94	0·05	2	2447·7 „	0·77	12 9	40837·8
2437·84	0·05	4	2437·7 „	„	13·0	41006·9
2413·26	0·05	4	2413·7 „	0·76	13·2	41425·6
2375·1	1·00	10	2375·9 „	0·75	13·4	42090·1
*2331·41	0·05	4	2332·1 „	0·74	13·7	42878·8
2324·73	0·05	4	2325·8 „	„	„	43002·0
2320·31	0·05	4	2321·1 „	„	„	43084·0
2317·10	0·05	4	2317·9 „	„	13·8	43143·6
2312·5	0·50	8n		„	„	43229·4
2309·74	0·10	10r	2310·5 „	„	„	43276·2
2248·79	0·05		2250·1 „	0·72	14·2	44454·2
2246·46	0·05		2247·8 „	„	„	44500·3

For the lines marked 4* 5* 6* 7* $a = 30712{\cdot}4$ or $31633{\cdot}2$, $b = 13062{\cdot}1$, $c = 109382{\cdot}3$; for those marked 4† 5† 6† $a = 30696{\cdot}2$ or $31617{\cdot}0$, $b = 12378{\cdot}8$, $c = 39430{\cdot}3$.

* See Iron. § See Bismuth. ‡ See Cadmium.

Gold (Arc Spectrum).

Kayser and Runge (' Ueber die Spectren der Elemente,' Pt. V. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	$\frac{1}{\lambda}$−	
6278·37	0·05	4	6277·8 Thalén	1·85	4·6	15923·1
5957·24	0·05	4	5956·7 ,,	1·75	4·9	16781·4
5863·17	0·05	4	5863· Huggins	1·73	5·0	17050·6
5837·64	0·05	6	5837·7 Thalén	1·72	,,	17127·2
5656·00	0·05	4	5654·2 Huggins	1·67	5·2	17675·1
§5230·47	0·05	4	5231·1 Thalén	1·55	5·7	19113·0
5064·75	0·05	2	5067·6 Huggins	1·50	5·8	19738·5
4792·79	0·05	6	4792·7 Thalén	1·42	6·2	20858·5
4488·46	0·05	4	4489·8 Huggins	1·34	6·6	22272·8
4437·44	0 05	4	4437·7 L. de B.	1·32	6·7	22528·8
4364·72	0·10	1		1·30	6·8	22904·2
4241·99	0·05	2		1·27	7·0	23566·8
4084·26	0·05	2		1·22	7·3	24476·9
4065·22	0·05	6	4064·6 ,,	,,	7·4	24591·5
4041·07	0·05	2		1·17	7·7	24738·2
3909·54	0·05	2		,,	,,	25570·8
3898·04	0·05	4b		,,	,,	25646·2
3553·72	0·03	2		1·08	8·6	28130·9
3467·19	0·10	1b		1·03	8·8	28833·0
3320·32	0·05	4b		1·01	9·2	30108·4
3308·42	0·05	2b		,,	,,	30216·7
*3265·18	0·05	2b				30617·0
3230·73	0·05	4b		1·00	9·4	30943·4
3204·81	0·05	4b		0·98	9·5	31193·6
3194·82	0·05	4b		0·97	9·6	31291·1
3181·90	0·10	1b		,,	,,	31418·2
3127·03	0·15	1b		0·96	9·8	31969·4
3122·88	0·03	6r	3122·8 L. & D.	,,	,,	32011·9
3117·08	0·05	4b		0·95	,,	32071·5
3038·25	0·05	1b		0·93	10·1	32903·6
3033·38	0·05	6n		,,	,,	32956·4
*3029·32	0·05	6		,,	,,	33000·6
†3024·67	0·15	2n		,,	,,	33051·4
*3014·32	0·10	2b		,,	10·2	33164·8
2975·73	0·10	1b		0·92	10·3	33594·9
2973·67	0·10	2n		0·91	,,	33618·2
*2970·55	0·10	2b		,,	10·4	33653·4
2963·89	0·05	4b		,,	,,	33729·0
2962·12	0·10	1n		,,	,,	33749·2
2932·33	0·05	6b		0·90	10·5	34092·1
‡2913·63	0·05	4		,,	10·6	34310·8
2905·98	0·05	6b		,,	10·7	34401·1
2892·07	0·05	4b		0·89	,,	34566·6
2883·55	0·05	4		,,	,,	34668·8
2748·35	0·05	4r		0·86	11·3	36374·2
2701·03	0·05	4		0·83	11·5	37011·4
2694·40	0·05	1b		,,	11·6	37102·4
2688·86	0·05	4		,,	,,	37188·9
2676·05	0·03	10r	2676·2 ,,	0·84	11·7	37315·0
2590·19	0·05	4		0·81	12·1	38595·1

§ ' Not due to gold ' (Krüss).

GOLD (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2544·30	0·05	4		0·80	12·4	39291·1
2510·56	0·05	4		0·79	12·5	39819·3
2428·06	0·03	10r	2428·0 L. & D.	0·77	13·1	41172·0
2387·85	0·05	4		0·76	13·3	41865·4
2364·69	0·05	4		0·75	13·4	42275·4
2352·75	0·05	4		,,	13·5	42490·0
2283·42	0·05	4		0·73	14·0	43780·0

† See Bismuth. * See Iron. ‡ See Tin.

ALUMINIUM (ARC SPECTRUM).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. VI. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3† 3961·68	0·03	10r	3961·1 Th. 3960·9 H. & A.	1·19	7·6	25234·2
3944·16	0·03	10r	3943·1 ,, 3943·2 ,,	1·18	,,	25346·3
3092·95	0·03	6r	3091·5 L.& D. 3091·9 ,,	0·95	9·9	32321·7
3092·84	0·03	10r		,,	,,	32322·8
3082·27	0·03	10r	3080·5 ,, 3081·2 ,,	0·94	,,	32433·7
3066·28	0·03	6	3065·0 ,,	,,	10·0	32602·8
3064·42	0·03	6	3062·8 ,,	,,	,,	32622·6
3060·04	0·03	6	3058·5 ,,	,,	,,	32669·3
3057·26	0·03	6	3056·4 ,,	,,	,,	32699·0
3054·81	0·03	6	3053·6 ,,	,,	,,	32725·3
3050·19	0·03	6	3049·2 ,,	,,	,,	32774·8
4† 2660·49	0·03	10r	2659·8 ,,	0·83	11·7	37575·4
2652·56	0·03	10r	2652·0 ,,	,,	11·8	37687·6
2575·49	0·03	4r	2574·5 ,,	0·81	12·2	38815·4
2575·20	0·03	10r		,,	,,	38819·7
2568·08	0·03	10r	2567·5 ,,	,,	,,	38927·4
2426·22	0·20	4bv		0·77	13·1	41203·3
2419·64	0·20	2bv		,,	,,	41315·3
6*† 2378·52	0·05	6r	2378·4 ,,	0·75	13·3	42029·7
2373·45	0·03	4r	2373·3 H.&A. 2373·2 L.&D.	,,	13·4	42119·4
2373·23	0·03	8r			,,	42123·3
2372·21	0·05	4r	2372·0 ,,		,,	42141·4
2367·16	0·03	10r	2367·2 ,, 2366·9 ,,		,,	42231·3
2321·64	0·03	4		0·74	13·7	43059·3
2319·12	0·03	2		,,	,,	43106·1
2317·55	0·03	2		,,	13·8	43135·2
2315·05	0·03	2		,,	,,	43182·2
2313·60	0·03	2		,,	,,	43208·9
§ 2312·56	0·03	2		,,	,,	43228·3
7* 2269·20	0·05	8	2268·7 L. & D.	0·72	14·1	44054·3
2263·83	0·10	2r	2263·1 ,,			44158·8
6† 2263·52	0·05	8r		,,		44164·9
2258·27	0·10	2	2257·3 ,,			44267·6

Aluminium (Arc Spectrum)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2231·27	0·20	1b^v			14·2	44803·4
‡ 2225·77	0·20	1b^v			14·3	44914·0
8* { 2210·15	0·10	4r	2210·0 L. & D.		14·4	45231·4
7† { 2204·73	0·10	4r	2205·0 ,,		14·5	45342·5
2199·71‡	0·20	1r			,,	45446·0
9* { 2174·13	0·10	1r	2175·0 Cornu		14·6	45980·8
2168·87	0·10	1r	2169·8 ,,		14·7	46092·3
10* { 2150·69	0·20	1r	2151·6 ,,		14·8	46481·9
2145·48	0·20	1r	2146·4 ,,		,,	46594·8
11* { 2134·81	0·20	1r	2134·6 ,,		14·9	46825·7
2129·52	0·20	1r	2129·4 ,,		15·0	46943·9
12* { 2123·44	0 20	1r	2122·5 ,,		,,	47078·4
2118·58	0·20	1r	2117·4 ,,		,,	47186·4

The oscillation frequencies (in air) of the pairs marked * can be calculated from the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, when $a = 48308·2$ for the *first* line, 48420·2 for the *second* line of the pair, $b = 15666·2$ and $c = 250533·1$; and for the pairs marked † $a = 48244·5$ for the *first* line and 48356·5 for the *second* line, $b = 12752\ 7$ and $c = 68781·9$. The figure preceding the sign * or † shows the value of n.

§ See Silver. ‡ See Copper.

Indium (Arc Spectrum).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. VI. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4511·44	0·10	10r 3†	4510·2 H. & A.	1·34	6·6	22159·3
‡4101·87	0·10	8r 3†	4101·3 ,,	1·23	7·3	24371·8
3258·66	0·05	6r 4*	3257·8 ,,	1·00	9·4	30678·1
3256·17	0·05	10r	3255·5 ,,	0·99	,,	30701·5
3039·46	0·05	10r 4*	3038·7 ,,	0·93	10·1	32890·5
2932·71	0·05	6r 4†	2932·3 ,,	0·90	10·5	34087·7
2753·97	0·05	6r 4†	2752·8 ,,	0·86	11·3	36299·9
2720·10	0·20	2nr		0·85	11·5	36751·9
2714·05	0·05	6r 5*	2712·9 ,,	0·84	,,	36833·7
2710·38	0·05	10r	2709·3 ,,	,,	,,	36883·7
2666·33	0·20	2b^r		0·83	11·7	37493·0
2601·84	0·05	6r 5†	2602·5 ,,	0·82	12·1	38422·2
2572·71	0·20	2b^v		0·81	12·2	38857·3
2565·59	0·20	2n	2564·7 ,,	,,	,,	38965·2
2560·25	0·05	8r 5*	2559·5 ,,	0·80	,,	39046·5
2523·08	0·10	4r 6*		0·79	12·5	39621·6
‖2521·45	0·05	8r	2520·9 ,,	,,	,,	39647·2

Indium (Arc Spectrum)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2470·65	0·15	2	2470·2 H. & A.	0·78	12·8	40462·4
2468·09	0·05	4r 6†	2468·4 „			40504·4
2460·14	0·05	6r 5†	2460·8 „			40635·3
2430·8	0·50	1r 7*	2429·0 „	0·77	13·0	41125·7
2429·76	0·20	1r	2428·6 „	„	„	41143·3
§2399·33	0·15	4r? 7†		0·76	13·2	41665·1
2389·64	0·05	8r 6*	2388·0 „	„	13·3	41834·0
†2379·74	0·20	1r 8*		0·75	13·3	42008·1
2357·7	0·50	1r 8†	2357·0 „	„	13·5	42400·7
2340·30	0·15	6r 6†		0·74	13·6	42716·0
2306·8	0·50	1r 7*	2306·9 „	0·73	13·8	43336·3
2278·3	0·30	1r 7†		„	14·0	43878·4
**2260·6	0·30	1r 8*		0·72	14·1	44221·9
2241·6	0·30	1r 8†			14·2	44596·8
2230·9	0·30	1r 9*			14·3	44811·6
**2218·3	0·30	1r 9†			14·4	45065·2
2211·2	0·30	1r 10*			„	45209·9
2200·0	0·30	1r 10†			14·5	45440·1
2197·5	0·30	1r 11*			„	45491·8
2187·5	0·30	1r 12*			14·6	45699·7
2180·0	0·30	1r 13*			„	45857·0

The oscillation frequencies (in air) of the pairs marked * can be calculated from the formula $10^8\frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$; where $a = 44515·4$ for the *first* line and 46728·6 for the *second* line of the pair, $b = 13930·8$, $c = 131103·2$, and for the pairs marked † $a = 44535·0$ for the *first* line, and 46748·2 for the *second* line of the pair, $b = 12676·6$, $c = 64358·4$. The figure preceding the sign * or † shows the value of n.

‡ See Zinc. ‖ See Cobalt. § See Iron. † See Thallium.
** See Copper.

Thallium (Arc Spectrum).

Kayser and Runge (' Ueber die Spectren der Elemente,' Pt. VI. Berlin, 1892).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5528·3	0·50	2b^{v}		1·63	5·3	18083·4
5350·65	0·03	10r 3†	5349·6 Thalén	1 58	5·6	18683·7
3775·87	0·03	10r 3†	3775·6 L. & D.	1·14	8·0	26476·0
3529·58	0·03	8r 4*	3528·3 „ 3528·8 H.&A.	1·07	8·6	28323·4
3519·39	0·03	10r	3517·8 „ 3518·6 „	„	„	28405·4
3229·88	0·03	10r 4†	3228·1 „ 3229·0 „	0·99	9·5	30951·4
2978·05	0·20	1b^{v}		0·92	10·3	33568·7
2945·15	0·15	4b^{v}	2943·9 „	0·91	10·5	33943·6

THALLIUM—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2921·63	0·03	6r 5*	2921·3 L.&D.	2920·8 H.&A.	0·90	10·6	34216·9
2918·43	0·03	10r	2917·8 ,,	2917·7 ,,	,,	,,	34254·4
2895·52	0·15	4b^v	2895·2 ,,	2893·9 ,,	,,	10·7	34525·4
2826·27	0·05	8r 5†	2825·8 ,,	2825·4 ,,	0·88	11·0	35371·3
2767·97	0·03	10r 4*		2767·1 ,,	0·86	11·2	36116·4
2710·77	0·03	4r 6*	2710·4 ,,	2709·4 ,,	0·84	11·5	36878·4
2709·33	0·03	8r	2708·8 ,,	2708·6 ,,	,,	,,	36898·9
2700·3	0·50	2n	2699·7 ,	2700·1 ,,	,,	,,	37021·4
2665·67	0·05	6r 6†	2665·0 ,,	2665·0 ,,	0·83	11·7	37502·3
2609·86	0·03	4r 7*	2609·4 } ,,	2608·7 ,,	0·82	12·0	38305·2
2609·08	0·03	6r	2608·6 }		,,	,,	38315·7
2585·68	0·05	4r 7†			0·81	12·1	38662·4
2580·23	0·03	8r 4†		2579·7 ,,	,,	12·2	38744·0
2553·07	0·10	2r 8* }	2552·0 ,,	2551·6 ,,	0·80	12·3	39156·2
2552·62	0·10	6r }			,,	,,	39163·1
2538·27	0·10	2r 8†				12·4	39384·5
2517·50	0·10	4r 9*	2517·0 ,,		0·79	12·5	39709·5
2508·03	0·15	1r 9†			,,	12·6	39859·3
2494·00	0·10	2r 10*			,,	,,	40083·6
2487·57	0·20	1r 10†			0·78	12·7	40187·2
2477·58	0·10	1r 11*		2477·6 ,,		,,	40349·3
2472·65	0·20	1r 11†				12·8	40429·6
2465·54	0·20	1r 12*				,,	40546·3
2462·01	0·30	1r 12†				,,	40604·4
2456·53	0·20	1r 13*				,,	40695·0
2453·87	0·30	1r 13†			0·77	12·9	40739·1
2449·57	0·30	1r 14*					40810·6
2447·59	0·30	1r 14†					40843·6
2444·00	0·30	1r 15*					40903·6
2442·24	0·30	1r 15†					40933·1
2439·58	0·30	1r 16*			,,	,,	40977·8
2416·78	0·15	1b^v			0·76	13·1	41364·3
‖2379·66	0·03	8r 5*	2380·0 ,,		0·75	13·3	42009·5
2362·16	0·15	2b^r	2364·8 ,,		,,	13·4	42320·7
2316·01	0·03	6r 4†			0·74	13·8	43163·9
2237·91	0·10	6r 6*	2238·7 Cornu		0·71	14·2	44670·3
2210·80	0·10	2r	2210·0 ,,			14·4	45218·1
2207·13	0·10	4r 6†				14·5	45293·2
2168·68	0·30	4r 7*	2169·0 ,,			14·7	46096·9
2152·08	0·30	1r 7†	2152·3 ,,			14·8	46451·9
2129·39	0·30	1r 8*	2128·6 ,,			15·0	46946·8

The lines marked * form a series of pairs for which in the formula $10^8 \frac{1}{\lambda} = a - bn^{-2} - cn^{-4}$, $a = 41542·7$ for the *first* line, 49337·6 for the *second*, $b = 13229·3$, $c = 126522·3$. For the pairs marked † $a = 41506·4$ or $49301·3$, $b = 12261·7$, $c = 79068·3$.

‖ See Indium.

Note.—The *spark* spectrum of Thallium shows a red line at 6558, nearly coincident with the (Hydrogen) line. This line appears also in the arc spectrum with the metal or its chloride.—H. WILDE, *Proc. Roy. Soc.*, pp. 53, 369.

Nitrogen (Vacuum Tube).

Ames ('Phil. Mag.' xxx. p. 57, 1890).
Eder and Valenta* ('Denkschr. Kais. Akad. Wissensch. Wien,' Bd. lx. 1893).

Wave-length (Rowland)		Hasselberg † or Deslandres	Reduction to Vacuum		Oscillation Frequency in Vacuo (Ames)
Ames	Eder and Valenta		λ+	$\frac{1}{\lambda}-$	
4975·0		4974·0 H.	1·47	5·9	20094·6
4917·1		4916·72 ,,	1·46	6·0	20331·2
4813·9		4813·01 ,,	1·43	6·2	20767·0
4722·6		4721·61 ,,	1·40	6·3	21168·5
4666·35		4665·22 ,,	1·39	6·4	21423·6
4648·4		4647·30 ,,	1·38	,,	21506·4
4573·7		4572·78 ,,	1·36	6·5	21857·6
4489·6		4488·60 ,,	1·34	6·6	22267·1
4415·7		4414·68 ,,	1·32	6·7	22639·8
4356·3		4355·80 ,,	1·30	6·8	22948·5
4344·4		?	,,	6·9	23011·2
4269·15	4270	4268·83 ,,	1·28	7·0	23416·9
4200·85	4206	4200·26 ,,	1·26	7·1	23797·6
4141·2	4141	4140·24 ,,	1·24	7·2	24140·4
4094·0		4093·69 ,,	1·23	7·3	24418·7
4059·0	4058	4058·27 ,,	1·22	7·4	24629·2
3998·0	3997	3997·22 ,,	1·20	7·5	25005·0
3942·55	3942	3941·5 D.	1·18	7·6	25356·7
3894·25		3893·5 ,,	1·17	7·7	25671·2
3856·9		3856·2 ,,	1·16	7·8	25919·8
3804·85	3803	3804·2 ,,	1·14	7·9	26274·3
3755·15	3755	3754·45 ,,	1·13	8·0	26622·1
3710·15	3711	3709·3 ,,	1·12	8·1	26945·0
3671·35	3683	3670·5 ,,	1·11	8·2	27229·7
3642·0	3639	3640·9 ,,	1·10	8·3	27449·1
3576·85	3576	3576·0 ,,	1·08	8·5	27949·1
3536·5	3536	3536·4 ,,	1·07	8·6	28267·9
3500·15	3499	3499·1 ,,	1·06	8·7	28561·5
3469·05		3468·1 ,,	1·05	8·8	28817·3
3446·2		3445·3 ,,	,,	,,	29018·7
3371·2	3369	3370·8 ,,	1·03	9·1	29653·9
3338·6		3338·1 ,,	1·02	9·2	29948·5
3309·4		3308·7 ,,	1·01	,,	30207·8
3284·8		3284·2 ,,	1·00	9·3	30434·0
3267·5		3267·1 ,,	,,	9·4	30595·0
3158·9		3158·3 ,,	0·96	9·7	31646·9
3135·7		3134·9 ,,	,,	9·8	31881·0
3116·4		3115·75 ,,	0·95	,,	32078·5
3103·8		3103·2 ,,	,,	9·9	32208·7
2976·7	2976	2976·1 ,,	0·92	10·3	33583·9
2961·9	2962	2960·8 ,,	0·91	10·4	33751·7
2953·0	2953	2952·4 ,,	,,	,,	33853·4
2819·7		2818·7 ,,	0·87	11·0	35453·8
2814·15		2813·1 ,,	,,	,,	35523·7

This 'positive band' spectrum of nitrogen ('Index,' p. 112) consists of some eventy or eighty 'bands,' each most intense at the least refracted edge, which enerally consists of three 'lines' forming a 'head' to the band. The measurements f Ames are of the *central* line of the head.

* Induction spark between moist carbons in air, which give also the following *mmonia* bands: 2594·7, 2593·4, 2586·8, 2585·3, 2478·0, 2476·6, 2470·7, 2469·5.

† See Hasselberg's 'Positive Band Spectrum of Nitrogen,' *Index*, p. 213.

Carbon (Line Spectrum).

Eder and Valenta (' Denkschr. Kais. Akad. Wissensch. Wien,' Bd. lx. 1893).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
6584·2	1	*6583·0 A. & Th.		1·93	4·5	15183
6578·7	1	*6577·5 „		„	„	15196
Not seen by	E. & V.	5694·1				
		5660·9				
		5646·5				
		5638·3				
5379·8	1	5379·0 A. & Th.		1·59	5·5	18583
5151·2	1	5150·5 „		1·53	5·8	19407
5144·9	1	5144·2 „		1·52	„	19431
5133·7	1	5133·0 „		„	„	19473
4556·3	1	—		1·36	6·5	21941
4267·5	4	4266·3 H. & A.		1·27	7·0	23426
3920·8	2b	3919·5 „	3919·3 L. & D.	1·18	7·7	25497
†3883·8	3	3881·9 „		1·17	„	25740
3877·0	1	3875·7 „	3876·5 „	1·16	„	25785
†3872·0	2	3870·7 „	‡3871·5 K. & R.	„	„	25819
3861·6	1		‡3861·9 „	„	7·8	25888
3854·5	1		‡3855·0 „	„	„	25936
3848·0	1		—	„	„	25980
†3590·1	1n	3589·9 „		1·09	8·5	27846
†3585·6	1n	3584·8 „	‡3585·9 „	1·08	„	28873
		3583·3 „	‡3584·1 „			
†3361·0	n			1·02	9·1	29744
Not seen by	E. & V.	3167·7 „				
		3166·0 „				
2993·2	bn	2993·1 „	2995·0 L. & D.	0·92	10·3	33399
2967·6	bn	2967·3 „	2968·0 „	0·91	10·4	33687
2905·4	1					
2837·4	6	2836·7 „	2837·2 „	0·90	10·7	33408
2836·2	6	2835·9 „	2836·3 „	0·88	10·9	35248
2747·3	5	2746·6 „	2746·5 „	0·86	11·3	36388
Not seen by	E. & V.		2733·2 „			
2641·4	1	2640·0 „	2640·7 „	0·83	11·8	37847
2567·7	1			0·81	12·2	38933
2554·6	1			0·80	12·3	39133
2511·8	6	2511·6 „	2511·9 „	0·79	12·5	39800
2508·0	6	2508·7 „	2509·0 „	„	12·6	39860
2498·0	1n			„	„	40020
2496·8	1n			„	„	40048
2479·0	10	2478·3 „	2478·3 „	0·78	12·7	40326
2402·1	1n			0·76	13·2	41617
2343·5	1n			0·74	13·6	42658
2342·6	1n			„	„	42674
2332·5	1n			„	13·7	42859
2296·8	5b	2297·7 „	2296·5 „	0·73	13·9	43525

* Possibly not carbon lines.

† Due to cyanogen (E. & V.); but Hartley attributes these lines to the element carbon (*Proc. Roy. Soc.*, April 19, 1894).

‡ Kayser and Runge (on Rowland's scale).

Silicon.

Eder and Valenta ('Denkschr. Kais. Akad. Wissensch. Wien,' Bd. lx. 1893).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
		6366 Salet	1·87	4·6	1570–
		6341 ,,	1·86	,,	1577–
		5981 ,,	1·76	4·9	1672–
		5960 ,,	,,	,,	1677–
		5057 ,,	1·50	5·9	1977–
		5041 ,,	1·49	,,	1983–
		4566 ,,	1·36	6·5	2189–
4131·5	4	4139 ,,	1·24	7·2	24197
4126·5	4		,,	,,	24226
3905·4	3	3901 ,,	1·17	7·7	25598
3862·5	3		1·16	7·8	25882
3855·7	3		,,	,,	25928
3834·4	1		1·15	,,	26072
3826·7	1		,,	7·9	26124
3795·9	2		1·14	,,	26336
3791·1	1		,,	,,	26369
3191·1	1		0·97	9·6	31327
3086·8	1		0·94	9·9	32386
2897·2	4		0·90	10·7	34505
2881·6	10	2881·5 H. & A.	0·89	,,	34692
2689·8	1		0·84	11·6	37166
2677·4	1		,,	11·7	37338
2673·3	1		0·83	,,	37395
2659·0	1		,,	,,	37596
2631·9	8	2631·8 ,,	0·82	11·9	37983
2568·8	2		0·81	12·2	38916
2542·1	8	2541·5 ,,	0·80	12·4	39325
2534·7	1		,,	,,	·39440
2533·2	4		,,	,,	39463
2529·0	8	2528·6 ,,	,,	,,	39529
2524·1	8	2523·9 ,,	0·79	12·5	39606
* 2518·8	8	2518·9 ,,	,,	,,	39698
2516·0	10	2515·9 ,,	,,	,,	39743
2514·4	7	2514·0 ,,	,,	,,	39758
2506·7	8	2506·8 ,,	,,	12·6	39881
2479·8	1		0·78	12·7	40313
2452·6	3		0·77	12·9	40760
2446·0	3		,,	,,	40870
2443·9	2		,,	,,	40905
2439·4	2		,,	,,	40994
2435·9	8	2435·8 ,,	0·77	13·0	41040
2356·9	1		0·75	13·5	42415
2303·3	1		0·73	13·9	43413
2219·5	1			14·4	45041
2218·7	1			,,	45057
2217·2	4			,,	45088
* 2212·3	3			,,	45187
2211·5	3			,,	45204
2208·5	3			14·5	45265
2122·8	2			15·0	47093
1929·0	1	1929·0 Von Schumann		16·2	51824

* Characteristic group.

Ammonia.

Eder (' Denkschr. Kais. Akad. Wissensch. Wien,' Bd. lx. 1893).
Lecoq de Boisbaudran, ' C. R.' ci. 43.
Magnanini, ' Atti della Reale Accademia dei Lincei ' (4), v. 1889, p. 900.
Dibbits, ' Pogg. Ann.' cxxii. 1864, p. 497.
Hofmann, ' Pogg. Ann.' cxlvii. 92.

Flame Spectrum					Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
Lecoq de Boisbaudran a	Dibbits b	Hofmann c	Magnanini d	Eder (Rowland) e		$\lambda +$	$\frac{1}{\lambda} -$	
	7330 6520		6666		1n	1·96	4·4	14998d
	6629	6630	6626		1n	1·95	4·5	15088d
		6590	6602		1s	1·94	,,	15142d
	6542		6547		b_3	1·93	,,	15270d
		6430	6433		b_5^v	1·89	,,	15541d
			6405		1s	1·88	4·6	15608d
			6387		1s	,,	,,	15652d
			6366		1s	1·87	,,	15703d
			6351		1s	1·86	,,	15740d
6325	6330		6329		$6b^r$	,,	,,	15795d
6292	6290		6292		$6b^v$	1·85	,,	15888d
			6262			1·84	4·7	15964d
	6227		6228			1·83	,,	16052d
			6220			,,	,,	16072d
6180	6185		6188		$5b^v$	1·82	4·8	16155d
		6170	6170			,,	,,	16202d
	6130	6130						16308bc
	6117		6114		b	1·80	,,	16351d
			6094					16405d
			6070			1·79	4·9	16469d
6045	6060	6060	6050		6	1·78	,,	16524d
			6044		6	,,	,,	16540d
	6020	6030	6022		6	1·77	,,	16601d
			6014		6	,,	,,	16623d
6008	5990	6010	6005		$6b^v$	,,	,,	16648d
	5970	5970	5972		5n	1·76	,,	16740d
5964			5958		5n	1·75	,,	16779d
			5922			1·74	5·0	16881d
			5912			,,	,,	16910d
		5890	5886		b^r	,,	,,	16984d
			5882			1·73	,,	16996d
			5869		n	,,	,,	17034d
		585?	5860			,,	,,	17060d
		583?	5832			1·72	5·1	17142d
	5807		5805		b	1·71	,,	17221d
	5754		5787			,,	,,	17275d
			5773		s	1·70	,,	17317d
			5762		b^r	,,	,,	17350d
		5740	5746		b^r	,,	,,	17398d
		5710	5735			1·69	,,	17432d
			5724		b^r	,,	5·2	17465d
			5710			,,	,,	17508d

AMMONIA—*continued.*

Flame-spectrum: Lecoq de Boisbaudran a	Dibbits b	Hofmann c	Magnanini d	Eder (Rowland) e	Intensity and Character	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5702	5705		5702		6	1·68	5·2	17533d
			5693		6	,,	,,	17560d
	5664		5664		b_2	1·67	,,	17650d
			5640			1·66	,,	17725d
			5630			,,	,,	17757d
			5608			1·66	5·3	17827d
		5590	5597			1·65	,,	17862d
		5560	5568			1·64	,,	17954d
			5557			,,	,,	17990d
	5520		5525			1·63		18095d
			5485			1·62	5·4	18227d
			5465		b^r	1·61	,,	18293d
			5438			,,	,,	18384d
			5416			1·60	,,	18459d
	5390	5380	5390		n	1·59	5·5	18548d
			5339		b	1·58	5·6	18724d
			5303			1·57	,,	18851d
			5277		n b	1·56	,,	18970d
			5262		n	,,	,,	18998d
5252			5253		n b	1·55	,,	19031d
			5242		n	,,	,,	19071d
			5230		n	,,	5·7	19114d
			5212		b	1·54	,,	19180d
			5172			1·53	,,	19329d
			5166			,,	,,	19351d
	5158		5156		n	,,	5·8	19389d
	5128	5130	5127		b^r	1·52	,,	19499d
			5111		b	1·51	,,	19560d
	5079		5078	5079	b_1	1·50	,,	19683e
	4997			5007	b	1·48	5·9	19966e
		498?	4974	4984	b	,,	,,	20058e
				4966		1·47	6·0	20131e
				4924		1·46	,,	20303e
		4880	4878	4895		1·45	6·1	20423e
		4850	4864	4869		1·44	,,	20532e
			484?	4839		1·43	,,	20659e
	4782		4789	4785	b	1·42	6·2	20893e
			4774	4777		,,	,,	20928e
				4747		1·41	6·3	20060e
		4700		4722	b	1·40	6·3	21171e
		4690						
		4670		4678		1·39	,,	21371e
		4650						
				4662		,,	6·4	21444e
			4647?	4641		1·38	,,	21541e
		4610		4620		1·37	,,	21639e
		4590						
				4566		1·36	6·5	21895e
		4545	4538	4541	$b_{1·5}$	1·35	,,	22016e
			4513	4511		1·34	6·6	22161e
			4492	4499		,,	,,	22220e
				4488		,,	,,	22275e
				4460		1·33	6·7	22415e

AMMONIA—*continued.*

Flame Spectrum					Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
Lecoq de Bois-baudran a	Dibbits b	Hofmann c	Magnanini d	Eder (Rowland) e		$\lambda+$	$\frac{1}{\lambda}-$	
				4442	Bright lines on a weak continuous spectrum, but not so bright as the lines of the following bands: $\beta, \gamma, \delta, \epsilon, \zeta, \eta$.	1·32	6·7	22505
				4419		,,	,,	22623
				4350		1·30	6·9	22982
				4338		1·29	,,	23045
				4328		,,		23098
				4306		,,		23216
				4289		1·28	7·0	23308
				4244		1·27	,,	23556
				4204		1·26	7·1	23780
				4189		1·25	,,	23865
				4178		,,	,,	23928
				4162		,,	7·2	24020
				4142		1·24	,,	24136
				4099		1·23	7·3	24389
				4093		,,	,,	24425
				3959		1·19	7·6	25251
				3947		1·18	,,	25329
				3919		,,	,,	25509
				3885		1·17	,,	25732
				3797		1·14	7·9	26329
				3790		,,	,,	26377
				3779		,,	8·0	26454
				3750(?)		1·13	,,	26659
				3748		,,	,,	26673
				3740		,,	,,	26730
				3682		1·11	,,	27151
				3638		1·10	,,	27480
				3572		1·08	8·5	28088

Eder	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Eder	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda+$	$\frac{1}{\lambda}-$				$\lambda+$	$\frac{1}{\lambda}-$	
Band β					3370·0		1·02	9·1	29665
					3359·4			,,	29758
3432·2		1·04	8·9	29127	3353·5			,,	29810
3429 2			,,	29152	3340·3			,,	29928
3426·3			,,	29177	3336·0			9·2	29967
3423·0			,,	29205	3332·7			,,	29997
3419·6			,,	29234	3329·4		1·01	,,	30026
3416·0			,,	29265	3325·8			,,	30059
3412·6			,,	29294	3322·6			,,	30088
3408·9			,,	29326	3318·9			,,	30122
3405·5			9·0	29355	3315·9			,,	30148
3401·7			,,	29388	3312·8		1·01	,,	30177
3398·4		1·03	,,	29417	3209·6		,,		30208
3395·2			,,	29444	3306·5		,,		30234
3391·5			,,	29477	3303·8		,,		30259
3387·8			,,	29509	3300·8		,,	9·3	30286
3384·3			,,	29539	3298·3		,,	,,	30309
3380·5			,,	29572	3295·5		,,	,,	30335

AMMONIA—*continued.*

Eder	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
Band γ				
a 2718·3		0·85	11·5	36776
b 2717·2		,,		36791
c 2710·0		,,		36889
d 2708·2		0·84		36913

A shading of fine lines here which could not be measured.

Eder	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
Band δ				
a 2594·7	2	0·81	12·1	38528
b 2593·4	3			38547
c 2586·8	2			38646
d 2585·3	4			38668
2583·0	3			38688
2581·8	3		12·2	38721
2580·5	3			38740
2579·6	3			38754
2578·6	3			38769
2577·3	3			38788
2576·3	3			38803
2575·1	3			38821
2573·6	3			38844
2572·4	3			38862
2571·2	3			38880
2569·9	3			38900
2568·3	3			38924
2567·0	3			38944
2565·3	3			38970
2563·7	3	0·80		38994
2562·2	3		12·3	39017
2560·6	3			39041
2558·9	3			39067
2557·3	2			39092
2555·4	2			39121
2553·7	1			39147
2551·7	1			39177
2549·9	1			39205
2549·0	1			39219
2548·0	1			39234
2547·0	1			39250
2546·0	1			39265
2545·1	nebulous			39279
2543·9			12·4	39297
2543·1				39310
2542·3				39322
2541·5				39334
2540·2				39355
2539·2				39370
2537·8				39392
2536·9				39406
2535·4				39429
2534·1				39449
2532·8	nebulous			39470
2531·0				39498
2529·6				39519
2528·3				39540
2527·2				39557
2526·2		0·79	12·5	39573
2525·1				39590
2523·6				39613
2522·7				39628
2521·5				39645
2500·4			12·6	39681
2499·1				40002
Band ε				
a 2478·0	2	0·78	12·7	40342
b 2476·6	3			40365
c 2470·7	3			40462
d 2469·5	5		12·8	40471
2463·4	3			40581
2462·2	3			40601
2461·3	3			40616
2460·3	4			40633
2459·4	4			40647
2458·4	4			40664
2457·4	4			40681
2456·4	4			40697
2455·4	3		12·9	40714
2454·3	3			40742
2453·1	3	0·77		40752
2451·9	3			40772
2450·7	3			40792
2449·7	3			40809
2447·7	3			40842
2446·8	3			40857
2445·0	3			40887
2443·8	3			40907
2442·5	3			40929
2441·5	3			40946
2439·5	2		13·0	40979
2437·9	2			41006
2436·4	2			41031
2434·5	2			41063
2432·7	2			41093
2431·8	2			41109
2429·9	2		13·1	41141
2428·1	2			41171
2427·1	2			41188
9424·8	2			41227
2423·0	2			41258
2421·1	1			41290
2419·2	1			41323
2418·8	1			41330
2416·9	1	0·78		41362
2414·5	1		13·2	41403

AMMONIA—*continued.*

Eder	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2413·0	1			41429
2410·8	1			41467
2409·3	1			41493
2407·8	1			41518
2406·3	1			41544
Band ζ				
a 2370·7	2	0·75	13·4	42168
b 2369·9	3			42182
c 2364·1	2			42286
d 2363·0	4			42306
2361·4	2		13·5	42334
2360·5	2			42351
2359·9	2			42361
2359·0	3			42377
2358·8				42381
2357·4	4			42406
2356·5	4			42422
2355·5	4			42440
2354·7	4			42455
2354·0	4			42467
2353·2	4			42482
2352·4	4			42496
2351·4	4			42514
2350·7	4			42527
2349·4	4			42551
2348·4	4		13·6	42569
2347·4	4			42587
2346·4	4			42505
2345·4	4			42523
2344·7	4	0·75		42636
2343·0	4	0·74		42667
2341·7	4			42690
2340·4	4			42714
2339·1	5			42723
2337·8	5			42761

Eder	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2336·2	4			42791
*2334·8	3			42816
*2333·4	2		13·7	42843
2332·0	1			42868
2331·6	1			42875
2330·6	1			42894
2329·9	1			42907
2329·0	1			42923
2328·5	1			42932
2327·6	1			42949
2326·9	1			42962
2326·1	1			42977
2325·3	1			42992
2324·6	1			43004
2323·5	1			43021
2323·0	1			43034
2321·9	1			43054
2321·4	1			43064
2320·4	1			43082
2319·7	nebulous			43095
2317·9			13·8	43129
2316·5				43154
2315·1				43181
2313·1				43218
2311·6				43250
2309·4				43287
2307·4		0·73		43325
Band η				
a 2271	1	0·73	14·0	4402–
b 2270	1		14·1	4404–
c 2264	1			4416–
d 2262	1			4419–
A shading of fine lines extending to 2210				

* Double.

CARBON.

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. II. Berlin, 1889).

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
Second Carbon Band					Third Carbon Band				
5635·43	1st edge	1·66	5·2	17739·6	5165·30	1st edge	1·53	5·7	19354·3
5585·50	2nd edge	1·65	5·3	17898·2	5165·12	s			19354·9
5540·86	3rd edge	1·64	5·3	18042·4	5164·84				19356·0

CARBON—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5164·59				19356·9	5147·89	n			19419·5
5164·46				19357·4	5147·73	s			19420·1
5164·28				19358 1	5147·15				19422·4
5164·04				19359·0	5146·85				19423·6
5163·87				19359·6	5146·52				19424·8
5163·62				19360·6	5146·23	s			19425·9
5163·49				19361 0	5146·13				19426·3
*5163·16				19362·3	5145·52				19428·7
5162·96				19363·0	5145·27				19429·5
5162·60				19364·4	5144·98				19430·6
5162·41				19365·1	5144·72	s			19431·6
5161·95	n			19366·8	5144·62				19432·0
5161·77				19367·5	5143 91				19434·7
5161·40				19368·9	5143·64				19435·7
5161·23	n			19369·5	5143·37				19436·7
5161·08				19370·1	5142·98	s			19438·2
5160·79				19371·2	5142·89				19438·5
5160·43				19372·6	5142·15				19441·4
5160·31				19373·1	5141·93				19442·1
5159·92				19374·4	5141·69				19442·2
5159·66				19375·4	5141·37	s			19443·1
5159·50				19376·0	5141·26				19444·7
5159·10	n			19377·5	5140·41				19447·9
5158·69				19379·0	5140·18				19448·8
5158·58				19379·4	5139·95				19449·6
5158·17	n			19381·1	5139·49	s			19451·4
5157·79				19382·5	5139·39				19451·8
5157·65			5·7	19383·0	5138·56				19454·9
5157·24	n		5·8	19384·5	5138 34				19455·9
5156·71				19386·4	5138·13				19456·5
5156·61				19386·8	5137·72	s			19458·1
5156·17	n			19388·5	5137·62				19458·5
5155·70				19390·2	5136·71				19461·9
5155·56				19390·7	5136·47				19462·8
5155·25	n			19391·9	5136·31				19463·4
5155·07	n			19392·6	5135·70	s			19465·7
5154·49				19394·8	5135·63				19466·0
5154·35				19395·3	5134·70				19469·5
5153·82	n			19397·3	5134·53				19470·2
5153·32				19399·2	5134·34				19470·9
5153·21				19399·6	*5133·79	s			19473·0
5152·97				19400·5	5132·74				19477·0
5152 56	n			19402 0	5132·52				19477·8
5151·97				19404·3	5132·40				19478·5
5151·87				19404·6	*5131·68	s			19483·0
5151·57				19405·8	5130·62				19485·2
5151·22				19407·1	5130·46				19485·6
5150·73				19408·9	5130·32				19486·2
5150·61				19409·4	5129·67	s			19488·6
5150·20				19410·9	5129·36				19489·8
5149·83				19412·3	5129·20	s			19490·4
5149·33	n			19414·2	5128·93				19491·4
5149·14	s			19414·9	5128·72				19492·2
5148·65				19416·8	5128·51		1·52		19493·0
5148·36		1·52		19417·9	5128 23				19494·1

CARBON—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
5128·02				19494·9	5106·60	s			19576·7
5127·73				19496·0	5106·44				19577·3
5127·38				19497·3	5106·00				19579·0
5127·26				19497·8	5105·44				19581·2
5127·03				19498·7	5105·11	n			19582·4
5126·88				19499·2	5104·67				19583·1
5126·73				19499·8	5103·95	s			19586·9
5126·30				19501·4	5103·80				19587·4
5126·13	s			19502·1	5103·43				19588·9
5126·04				19502·4	5103·17				19589·8
5125·71				19503·6	5102·93		1·52	5·8	19590·8
5125·53				19504·3	5102·53	s			19592·3
5125·30	s			19505·1	5101·58				19595·0
5124·90				19506·8	5101·10	s			19597·8
5124·82				19508·1	5100·95				19598·4
5124·11	s			19509·8	5099·89	s			19602·5
5123·87	s			19510·7	5099·27				19604·9
5123·34				19512·7	5098·34	s			19608·4
5123·21				19513·2	5098·19				19609·0
5122·88	s			19514·5	5097·80	n			19610·5
5122·46				19516·1	5097·51	n			19611·6
5122·36				19516·4	5097·36	n			19612·2
5121·76	s			19518·7	5096·84	s			19614·2
*5121·52				19519·7	5095·98	n			19617·5
5120·71				19523·7	5095·36	s			19619·9
5120·39				19525·0	5095·22				19620·4
5119·72	n			19526·5	5094·83				19621·9
5119·40	s			19527·7	5094·13	s			19624·6
*5119·21				19528·4	5093·74				19626·1
5118·85				19529·8	5093·45	n			19627·3
5118·17	s			19532·4	5092·88	n			19629·5
5118·08				19532·8	5092·52	s			19630·9
5117·38				19535·4	5092·36				19631·5
5116·93	s			19537·2	5091·85				19633·4
*5116·74				19537·9	5091·51				19634·8
5116·30				19539·6	5091·29	n			19635·6
5115·84	s			19541·3	5090·94	s			19636·9
5114·99				19544·6	5090·51	n			19638·6
5114·48	s			19546·5	5089·43	s			19642·7
5114·31				19547·2	5089·29				19643·3
5113·76				19549·3	5088·55				19646·2
5113·17	s			19551·6	5088·11				19647·9
5112·41				19554·5	5087·53				19650·1
5111·87	s			19556·5	5087·09				19651·8
5111·71				19557·1	5086·91				19652·5
5111·42				19558·2	5086·43	s			19654·4
5110·77	s			19560·7	5086·31				19654·8
5110·10	n			19563·3	5085·12				19659·4
5109·79				19564·5	5084·80	s			19660·7
5109·35	s			19566·2	5083·93	n			19664·0
5109·17				19566·9	5083·24	s			19666·7
5108·45	n			19569·6	5083·08				19667·3
5107·97	s			19571·4	5082·35	n			19670·1
5107·67				19572·6	5081·86	s			19672·0
*5106·98				19575·2	5081·42				19673·7

CARBON—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
5080·45				19677·5	5050·86	s, n			19792·7
5080·15	s			19678·7	5049·89				19796·5
5080·03				19679·1	5049·68	s			19797·3
5078·44	s			19685·3	5049·52				19798·0
5078·16				19686·4	5048·61				19801·5
5077·70				19688·1	5048·46				19802·1
5077·52				19688·9	5048·27				19802·9
5076·83	s			19691·5	5047·68	n			19805·2
5076·70				19692·0	5047·41				19806·2
5075·42				19697·0	5047·16				19807·2
5075·03				19698·5	5047·02				19807·8
5073·64				19703·9	5045·39	s			19814·2
5073·53				19704·3	5044·87		1·49		19816·2
5073·16				19705·8	5043·81	n			19820·4
5072·61				19707·9	5043·42	n			19821·9
5072·48	n			19708·4	5041·47	s			19829·6
5071·88	s			19710·8	5040·86	n			19832·0
*5070·46				19716·3	5040·54				19833·2
5070·20	s			19717·3	5039·88	s			19835·8
5070·08				19717·8	5038·60	n			19840·9
5069·86				19718·6	5038·22				19842·4
5068·73	s			19723·0	5037·82	s			19844·0
5068·28				19724·8	5037·57				19844·9
5067·91				19726·2	5037·42				19845·5
5067·59	n			19727·4	5035·79	n			19852·0
5066·91	s			19730·1	5035·14	n			19854·5
5066·81				19730·5	5034·46				19857·2
5066·46				19731·9	5034·27				19858·0
5066·32	s			19732·4	5033·84	s			19859·7
5066·07				19733·4	*5033·68				19860·3
5065·56				19734·4	5033·08				19862·7
5065·41				19735·9	5032·18	s			19866·2
5065·18				19736·8	*5031·91				19867·3
5065·09	s			19737·2	5030·48				19872·9
5064·59	n	1·50		19739·2	5030·05	s			19874·6
5064·32				19740·2	5029·60				19876·4
5063·67	s			19742·7	5028·54	n			19880·0
5063·39			5·8	19743·8	5027·94				19883·1
5062·46			5·9	19747·4	5027·65				19884·0
5061·81				19749·9	*5025·92	s			19891·0
5061·53				19751·0	5025·49	n			19892·7
5059·94				19757·2	5024·22	s			19897·7
5059·85				19757·5	5024·09				19898·2
5059·34	n			19759·5	5022·07	s			19906·3
5058·91				19761·2	5021·72				19907·6
5058·06	s			19764·5	5020·89				19910·9
5056·80				19769·5	5020·79				19911·3
5056·30	s			19771·4	5019·87				19914·9
5056·21				19771·8	5018·58	n			19920·1
5055·88	n			19773·0	*5017·83	s			19923·0
5054·73	s			19777·5	5017·28				19925·2
5054·37				19779·0	5017·13				19925·7
5053·66				19781·7	5016·12				19929·8
5053·14				19783·8	5015·29	n			19933·1
5052·75	s			19785·3	5014·84	n			19934·9

CARBON—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5013·89	s			19938·7	4957·42				20165·8
5012·42	n			19944·5	4956·08	s			20171·2
5011·66				19947·6	4954·70				20176·9
5010·03				19954·1	4954·25				20178·7
5009·62 }	s			19955·7	4951·50	s			20189·9
5009·53 }				19956·1	4950·69				20193·2
5009·18				19957·4	4950·20				20195·2
5007·82				19962·9	4949·14				20199·5
5007·27	n			19965·1	4946·46	s			20210·5
5006·50	n			19968·1	4946·08				20212·0
5006·24				19969·2	4944·69				20217·7
*5005·55	s			19971·9	4942·94				20224·9
5004·37				19976·6	4942·62				20226·2
5003·20				19981·3	4941·92		1·46		20229·1
*5002·68				19983·4	4940·90				20233·2
*5001·09	s			19989·7	4937·37				20247·7
5000·32				19992·8	4936·83				20249·9
4999·91				19994·5	4935·11				20257·0
4999·65				19995·5	4933·27				20264·5
4999·32				19996·8	4932·18				20269·0
4999·09	n			19997·7	4928·52				20284·1
*4996·99	s			20006·1	4926·96				20290·5
4995·16	n			20013·5	4924·87				20299·1
4994·68	n			20015·4	4924·28				20311·6
4993·39				20020·6	4918·05				20327·3
4992·89				20022·6	4916·96				20331·8
*4992·44	s			20024·4	4915·16				20339·3
4991·50				20028·2	4914·63				20341·5
4991·12				20029·7	4912·23				20351·4
4990·64				20031·6	4906·86		1·45		20373·6
4990·12	n			20033·7	4905·88				20377·7
4988·27	s			20041·1	4905·42				20379·6
4987·44				20044·5	4901·96				20394·0
4986·70	n			20047·5	4900·90				20398·4
4985·96				20050·4	4899·98				20402·1
4983·62	s			20059·8	4897·56				20412·1
4981·79				20067·2	4896·52			6·0	20416·6
4979·36	s			20076·0	4893·72			6·1	20428·2
4976·97				20086·7	4890·89				20440·1
4975·69	n			20091·8	4887·01				20456·3
4974·58	s			20096·2	4886·14	s			20460·0
4973·69				20099·9	4885·64				20462·0
4972·78				20103·6	4885·05				20464·5
4971·54				20108·6	4881·19				20480·7
4970·25	s		6·0	20113·7	4877·33				20496·9
4967·84				20123·4	4875·51				20504·6
4967·53				20124·7	4870·58				20525·3
4965·39	s			20133·4	4867·52				20538·2
4963·60				20140·7	4864·86				20549·5
4963·02				20143·0	4859·88				20570·5
4960·96	s			20151·4	4858·55				20576·2
4959·19				20158·6	4857·68				20579·9
4958·59				20161·0	4855·95				20587·2
4958·16				20162·6	4854·11	s			20595·0
4957·73				20164·5	4853·67				20606·9

CARBON—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4852·44				20612·1	4728·37				21142·7
4848·93	s			20617·0	4727·61				21146·0
4847·66				20622·4	4727·09				21148·4
4843·11				20641·8	4726·43				21151·3
4842·31				20655·2	4726·11				21152·7
4837·99	s			20663·6	4725·62				21154·9
4837·59				20665·4	4725·05	n			21157·5
4832·80				20685·9	4724·47				21160·1
4832·13				20688·7	4723·97	n			21161·9
4827·38				20709·1	4723·50				21164·4
4826·87				20711·3	4722·23				21170·2
4825·88				20715·5	4721·19				21174·8
4821·80			6·2	20732·9	4719·87				21180·7
4820·93				20736·7	4718·76				21185·7
4817·14				20753·0	4717·30				21192·3
4815·66				20759·4	4716·70	n			21195·0
4811·99				20775·2	4716·10				21197·7
4811·50				20777·3	4715·31				21201·2
4809·63	s			20785·4	4715·14	s			21202·0
4804·35	s			20808·6	4714·57				21204·5
4801·03				20822·6	4714·04	n			21206·9
4798·79				20832·4	4713·45				21209·6
4798·32	s			20834·4	4713·21	s			21210·6
4796·24				20843·5	4712·69				21213·0
4792·92				20857·9	4712·22				21215·1
4786·88				20884·2	4711·67	s			21217·6
4785·63				20889·7	4711·11				21220·1
4781·46				20907·9	4710·40	s			21223·3
4779·44				20916·8	4709·85				21225·8
4775·32				20934·8	4709·12				21229·1
4772·18				20948·6	4708·58	s			21231·5
4769·87				20958·7	4707·60				21235·9
4763·86				20985·2	4707·18				21237·8
4758·33				21009·6	4706·87				21239·2
4752·06				21037·3	4705·88				21243·7
4746·55				21061·7	4705·39				21245·9
					4705·15				21247·0
Fourth Carbon Band					4703·96				21252·4
					5703·64				21253·8
4737·18			6·3	21103·3	4703·16				21256·0
4737·01				21104·2	4702·53				21258·8
4736·33				21107·2	4702·03	s			21261·1
4736·13				21108·0	4701·46				21263·7
4735·81				21109·4	4701·05				21265·5
4735·44				21111·1	4700·39				21268·5
4735·04				21112·8	4700·16		1·40	6·3	21269·6
4734·59				21114·9	4699·84				21271·0
4734·06				21117·2	4699·35				21273·2
4733·54				21119·5	4698·84				21275·5
4732·96				21122·1	4698·37	n			21277·7
4732·33				21124·9	4697·57	s			21281·3
4731·93				21126·7	4697·14				21283·3
4730·92				21131·2	4696·74				21285·1
4729·99				21135·4	4696·41				21285·6
4729·33				21138·3	4695·95				21287·6

Carbon—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4695·58				21290·3	4688·24				21323·7
4695·22		1·39		21292·0	4687·93				21325·1
4694·55				21295·0	4687·34				21327·8
4694·20				21296·6	4686·92				21329·7
4693·83	s			21298·3	4686·56				21331·3
4693·23				21301·0	4686·14				21333·2
4692·97				21302·2	4685·87				21334·5
4692·70				21303·5	4685·47				21336·3
4691·97				21306·7	4684·94				21338·7
4691·12				21310·6					
4690·66	s			21312·7	Fifth Car	bon Band			
4690·18				21315·1					
4689·43				21318·3	4381·93		1·31	6·8	22814·2
4688·98				21320 3	4371·31				22869·6
4688·68				21321·7	4365·01				22892·7

s Strong. n Nebulous. * Double. d g Dark ground.

Cyanogen (Arc Spectrum).

Kayser and Runge ('Ueber die Spectren der Elemente,' Pt. II. Berlin, 1889).

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
Second Band of the Cyanogen Spectrum					4212·05	8			23734·3
					4211·85				23735·4
*4216·12	1st edge	1·26	7·1	23711·4	4211·51	8			23737·4
4215·96				23712·5	4211·32				23738·4
4215·78				23713·5	4210·58				23740·3
4215·62	8			23714·3	4210·77				23741·5
4215·47				23715·1	4210·37				23743·2
4215·26	8			23716·3	4210·18	8			23744·8
4214·99	8			23717·7	4209·83				23746·8
4214·71	8, n			23719·3	4209·57	8			23748·3
4214·40	d			23721·1	4209·20				23750·4
4214·15	8			23722·5	4208·93	8			23751·9
4214·03				23723·2	4208·51				23754·3
4213·77	8			23724·6	4208·24	8			23755·8
4213·66				23725·2	4207·89	d			23757·8
4213·37	8			23726·9	4207·54	8			23759·8
4213·24				23727·6	4207·09				23762·3
4212·97	8			23729·1	4206·80	8			23763·9
4212·80				23730·1	4206·54				23765·4
4212·52	8			23731·7	4206·32				23766·7
4212·34				23732·7	4206·03	8			23768·3

Cyanogen (Arc Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4205·78				23769·7	4189·63	8			23861 3
4205·53				23771·1	4189·02	8			23862·8
4205·25	8			23772·7	4188·50	n			23867·8
4204·99				23774·2	4188·14				23869·9
4204·71				23776·8	4187·74				23872·1
4204·41	8			23777·4	4187·40				23874·1
4204·10				23779·2	4187·11				23875·7
4203·86				23780·6	4186·65				23878·3
4203·56	8			23782·3	4186·41				23879·7
4203·29				23783·8	4185·84	8			23883·0
4203·01				23785·4	4185·04	8			23887·5
4202·65	8			23787·4	4184·45				23890·9
4202·38				23788·9	4184·17				23892·5
4202·12	8			23789·4	4183·73				23895·0
4201·73				23792·6	4183·33				23897·3
4201·47				23794·1	4183·04				23899·0
4201·15				23795·9	4182·39	8			23902·7
4200·80	8			23797·9	4181·89				23905·5
4200·47				23799·8	4181·47	8			23907·9
4200·22				23801·2	4180·98				23910·7
4199·82	8			23803·4	4180·49				23913·5
4199·48				23805·4	4180·31				23914·6
4199·21				23806·9	4180·11				23915·7
4198·81	8			23809·2	4179·89				23917·0
4198·43				23811·4	4179·58				23918·7
4198·19				23812·8	4179·33				23920·2
4197·77	8			23814·1	4179·01				23922·0
4197·50				23816·6	4178·70				23923·8
***4197·24**	2nd edge	1·25	7·1	23818·1	4178·48				23925·0
4197·02				23819·3	4178·29				23926·1
4196·89				23820·1	4177·96	8			23928·0
4196·69				23821·2	4177·48	8			23930·8
4196·50				23822·3	4177·05				23933·2
4196·28				23823·5	4176·51				23936·3
4196·05	8			23824·8	4176·43				23936·8
4195·77	d g			23826·4	4176·05				23939·0
4195·46				23828·2	4175·75				23940·7
4195·14				23830·0	4175·54				23941·9
4195·03				23830·6	4175·28				23942·4
4194·77				23832·1	4174·99	8			23945·1
4194·61				23833·0	4174·42				23948·4
4194·37				23834·4	4174·13				23950·2
4193·97				23836·7	4173·80				23951·9
4193·82				23837·5	4173·41				23954·1
4193·51				23839·3	4173·14				23955·7
4193·31				23840·4	4172·98				23956·6
4193·03	8			23842·0	4172·53				23959·2
4192·67				23844·0	4172·18				23961·2
4192·51				23845·0	4171·82	8			23963·3
4192·15				23847·0	4171·09				23967·5
4191·95				23848·1	4170·63				23970·1
4191·46	8			23850·9	4170·22				23972·5
4190·86	n			23854·1	4169·59	n			23976·1
4190·54				23856·0	4169·31				23977·7
4190·25	8			23857·8	4168·83				23980 4

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4168·55				23982·1	4151·73				24079·2
4168·20				23984·1	4151·50				24080·5
4168·09				23984·7	4151·15				24082·5
4167·77				23986·5	4150·82				24084·4
4166·90				23991·6	4150·47				24086·5
4166·71				23992·7	4150·17				24088·2
4166·42				23994·3	4149·89				24089·8
4166·14				23995·9	4149·61				24091·5
4165·85				23997·6	4149·26	8			24093·5
4165·49	8			23999·7	4148·81				24096·1
4165·19	8			24001·4	4148·58				24097·4
4164·81				24003·6	4148·21				24099·6
4164·37				24006·1	4148·00				24100·8
4164·11				24007·6	4147·65				24102·8
4163·92			7·2	24008·5	4147·28				24105·0
4163·49	8, n			24011·1	4146·86				24107·4
4163·06				24013·6	4146·69				24108·4
4162·76				24015·3	4146·41				24110·1
4162·54				24016·6	4146·16				24111·5
4162·39				24017·5	4146·01	8			24112·4
4162·07				24019·3	4145·62				24114·6
4161·75	8			24021·2	4145·37				24116·1
4161·38	8			24023·3	4145·16				24117·3
4160·89				24026·1	4144·88				24118·9
4160·38				24029·1	4144·72				24119·3
4159·96	8			24031·5	4144·31				24122·3
4159·71				24032·9	4144·03				24123·9
4159·47				24034·3	4143·72				24125·6
4159·29				24035·4	4143·51				24126·9
4159·01				24037 0	4143·07	8			24129·5
4158·74				24038·5	4142·91				24130·4
4158·50		1·24		24039 9	4142·60				24132·2
4158·17	s, n			24041·8	4142·19				24134·6
4157·89				24043·5	4141·95				24136·0
4157·55				24045·4	4141·70				24137·5
4157·32				24046·8	4141·39				24139·3
4157·02				24047·5	4141·15				24140·7
4156·63				24050·8	4140·89	8			24142·2
4156·35				24052·4	4140·71				24143·3
4156·06				24054·1	4140·29	8			24145·7
4155·90				24055·0	4139·96				24147·6
4155·78				24055·7	4139·79				24148·6
4155·53	n			24057·1	4139·56				24150·0
4155·39				24057·9	4139·30				34151·5
4155·02				24060·1	4139·14				24152·4
4154·74				24061·7	4138·83				24154·2
4154·53				24062·9	4138·66				24155·2
4154·24				24064·6	4138·39				24156·8
4153·98				24066·1	4138·11				24158·4
4153·59			7·2	24068·4	4137.75				24160·5
4153·34				24069·8	4137·39	8			24162·6
4152·88				24071·5	4137·18				24163·9
4152·67				24073·7	4136·95				24165·2
4152 40				24075·3	4136·73				24166·5
4152 02				24077·5	4136·46				24168·1

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4136·17				24169·8	4117·32				24280·3
*4135·87				24171·5	4116·98				24282·3
4135·53				24173·5	4116·68				24284·1
4135·10				24176·0	4116·57				24284·8
4134·94				24177·5	4116·29				24286·4
4134·70				24178·4	4115·93				24288·5
4134·27				24180·9	4115·53				24290·9
4133·76	8			24183·9	4115·38				24291·8
4133·39	8			24186·0	4114·81				24295·2
4132·73				24189·9	4114·67				24296·0
4132·51				24191·2	4114·30				24298·2
4132·31		1·24	7·2	24192·3	4114·15	8			24299·1
4132·11				24193·5	4113·73				24301·5
4131·88				24194·9	4113·25				24304·4
4131·55				24196·8	4113·08				24305·4
4131·19	8			24198·9	4112·65				24307·9
4130·76				24201·4	4112·33				24309·8
4130·40				24203·6	4112·14				24310·8
4130·20				24204·7	4111·88				24312·5
4129·61				24208·2	4111·57				24314·3
4129·43				24209·2	4111·03				24317·5
4129·04				24211·5	4110·83				24318·7
4128·74				24213·3	4110·46				24320·9
4128·14	8			24216·8	4109·99	8			24323·7
4127·91				24218·1	4109·55				24326·3
4127·51				24220·5	4109·29				24327·8
4127·15				24222·6	4108·90				24330·1
4126·91				24224·0	4108·60				24331·9
4126·67	8			24225·4	4108·39				24333·1
4126·17				24228·4	4108·16				24334·5
4125·97				24229·5	4107·89				24336·1
4125·54				24232·1	4107·59				24337·7
4125·25				24233·8	4107·30				24339·6
4125·01		1·23		24235·2	4107·05				24341·1
4124·62				24237·5	4106·73	8			24343·0
4124·25	8			24239·6	4106·28				24345·6
4123·80				24242·3	4105·78				24348·6
4123·40				24244·6	4105·45				24350·5
4123·09				24246·5	4105·13				24352·4
4122·89				24248·2	4104·80				24354·4
4122·30	8, n			24251·1	4104·58				24355·7
4121·86				24253·7	4104·16				24358·2
4121·53				24255·6	4103·86				24360·0
4121·19				24257·6	4103·61				24361·5
4120·89				24259·4	4103·33				24363·2
4120·60				24261·1	*4102·84	8			24366·1
4120·30				24262·9	4102·26	n			24369·5
4120·11				24264·0	4101·65				24373·1
4119·43	8			24268·0	4101·38				24374·7
4119·09				24270·0	4100·94				24377·4
4118·65				24272·6	4100·64				24379·1
4118·31				24274·6	4100·32				24381·0
4118·00			7·3	24276·7	4099·96				24383·2
4117·84				24277·3	4099·58				24385·4
4117·66				24278·3	4099·22	8			24387·6

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4098·95				24389·2
4098·65				24391·0
4098·38				24392·6
4098·15				24394·0
4097·82				24395·9
4097·61				24396·2
4097·29				24398·1
4096·99	8			24400·9
4096·65				24402·9
4096·02	n			24406·6
4095·58				24409·3
4095·34				24410·7
4094·98				24412·8
4094·71				24414·5
4094·39	n			24416·4
4093·88				24419·3
4093·55				24420·9
4092·93	8			24425·0
4092·47				24427·3
4091·97				24430·8
4091·61				24433·0
4091·25				24435·1
4090·90	8			24437·2
4090·20	8, n	1·22		24441·4
4089·60				24445·0
4089·30				24446·8
4088·88	n			24449·3
4088·34				24452·5
4087·88	8, n			24455·3
4087·14				24459·7
4086·80				24461·3
4086·58				24463·0
4086·30				24464·7
4085·85				24467·4
4085·54				24469·3
4085·20				24471·3
4084·86				24473·3
4084·61				24474·8
4084·51				24475·4
4084·07				24478·1
4083·94				24478·9
4083·70				24480·3
4083·43				24481·9
4083·26	8			24482·9
4082·89				24485·2
4082·59		1·22	7·3	24487·0
4082·29				24488·8
4081·94				24490·9
4081·48				24492·6
4081·19				24495·4
4080·84				24497·5
4080·54				24499·3
4080·33				24500·5
4079·96				24502·7
4079·52				24505·4
4079·12				24507·8
4078·71				24509·3
4078·43				24511·9
4078·15				24512·6
4077·84	8			24515·5
4077·63				24516·7
4077·31				24518·7
4076·97				24520·7
4076·62				24522·8
4076·30				24524·8
4076·01	8			24526·5
4075·66				24528·6
4075·25				24531·1
4074·65				24534·7
4074·24				24537·2
4073·92				24539·1
4073·69	8		7·4	24540·4
4073·28				24542·8
4073·10				24543·9
4072·49				24547·6
4071·98				24550·7
4071·61				24552·9
4071·13				24555·8
4070·70				24557·4
4070·37				24560·4
4070·04				24562·4
4069·71				24564·4
4069·33	8			24566·7
4069·00				24568·7
4068·67				24570·7
4068·27				24572·1
4068·05				24574·4
4067·68				24576·6
4067·49				24577·8
4067·17				24579·7
4066·83				24581·8
4066·56				24582·4
4066·22				24585·5
4065·66				24588·9
4065·20				24591·6
4064·85				24593·8
4064·44				24596·2
4064·10				24598·3
*4063·15				24604·1
4062·63				24607·2
4062·26				24609·4
4062·01				24611·0
4061·53				24614·3
4061·15				24616·4
4060·73				24618·7
4060·34				24621·1
4059·92				24623·6
4059·48				24626·3
4059·11				24628·5
4058·67				24631·2

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
4058·31				24633·4	4037·25				24761·9
4058·04				24635·0	4036·85				24764·4
4057·68				24637·2	4036·60				24765·9
4057·33				24639·4	4035·83				24770·7
4057·15				24640·5	4035·49				24772·7
4056·83				24642·4	4035·17				24774·7
4056·55				24644·1	4034·98				24775·9
4056·12		1·22	7·4	24646·7	4034·56	8			24778·5
4055·75				24648·9	4034·20				24780·7
4055·42		1·21		24651·0	4033·70				24783·7
4054·92				24653·6	4033·15				24787·1
4054·56				24656·5	4032·50				24791·1
4054·14				24658·7	4031·76				24795·7
4053·87				24660·4	4031·50				24797·3
4053·58				24662·2	4031·16				24799·4
4053·35	8			24663·6	4030·88				24801·1
4053·00				24665·7	4030·57				24803·0
4052·70				24667·5	4029·75	n		7·5	24807·9
4052·38				24669·5	4029·30				24810·9
4052·09				24671·2	4028·85				24813·7
4051·66				24673·8	4028·41				24816·4
4051·00	8			24677·9	4028·09				24818·4
4050·61				24680·2	4027·74				24820·5
4050·31				24682·1	4027·01				24825·0
4050·16				24683·0	4026·64		1·21	7·5	24827·1
4049·87				24684·8	4025·13				24836·4
4049·62				24686·3	4024·88				24838·0
4049·14				24689·2	4024·64				24839·4
4048·74				24691·6	4024·34				24841·3
4048·37				24693·9	4023·92				24844·0
4047·74				24697·7	4023·69				24845·4
4047·31				24700·4	4023·14	n			24848·7
4047·03				24702·1	4022·67				24851·6
4046·68				24703·2	4021·90				24856·4
4046·33				24706·4	4021·57				24858·4
4045·73				24710·0	4021·14				24861·1
4045·35				24712·3	4020·71				24863·7
4044·93				24714·9	4020·43				24865·5
4044·63				24716·7	4019·73		1·20		24869·6
4044·48				24717·7	4019·32				24872·3
4044·22				24719·2	4018·83				24875·4
4043·94				24721·6	4018·53				24877·2
4043·65				24722·7	4018·19				24879·3
4043·43				24724·1	4017·80				24881·7
4042·53	n			24729·6	4017·57				24883·2
4042·14				24732·0	4017·26				24885·1
4041·53				24735·7	4016·81	n			24887·9
4041·28				24737·2	4016·08				24892·4
4040·55	n			24741·7	4015·45				24896·3
4040·28				24743·4	4014·94				24899·5
4039·40	n			24748·8	4014·64				24901·3
4038·79				24752·5	4014·32				24903·3
4038·40				24754·9	4013·80				24906·6
4038·09				24756·8	4013·56				24908·0
4037·81				24758·5	4013·28				24909·8

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4012·97				24911·7
4012·72				24913·2
4011·82				24918·8
4011·60				24920·2
4011·32				24922·0
4010·47				24927·2
4009·68				24932·2
4009·44				24933·6
4009·18				24935·3
4008·94				24936·8
4008·57				24939·1
4008·12				24941·9
4007·73				24943·3
4007·50				24945·7
4006·72	n			24950·6
4005·51				24958·1

Third band of the Cyanogen Spectrum

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3883·55	1st edge	1·17	7·7	25741·9
3883·16				25744·5
3883·01				25745·5
3882·85				25746·6
3882·67				25747·8
3882·50				25748·9
3882·27				25750·4
3882·05				25751·9
3881·79				25753·6
3881·51				25755·4
3881·21				25757·5
3880·89		1·17	7·7	25759·6
3880·58	8			25761·6
3880·49				25762·2
3880·21	8			25764·1
3880·14				25764·6
3879·85	8			25766·5
3879·74				25767·2
3879·45	8			25769·1
3879·36				25769·7
3879·03	8			25771·9
3878·91				25772·7
3878·60				25774·8
3878·46				25775·7
3878·13				25777·9
3878·00				25778·8
3877·65				25781·1
3877·50		1·16		25782·1
3877·14				25784·5
3876·99				25785·5
3876·83				25786·6
3876·62				25788·0
3876·48				25788·9
3876·07	8			25791·6
3875·90				25792·7
3875·77				25793·6
3875·50				25795·4
3875·23	n			25797·2
3875·14				25797·8
3874·93				25799·2
3874·76				25800·3
3874·32	8			25803·3
3874·16				25804·3
3873·92				25805·9
3873·70				25807·4
3873·52				25808·6
3873·34				25809·8
3873·12	8			25811·3
3872·88	8			25812·9
3872·65	n			25814·4
3872·37	8			25816·3
3872·20				25817·4
3871·91				25819·3
3871·70				25820·8
3871·54	2nd edge			25821·8
	d g			
3871·17				25824·3
3871·02				25825·3
3870·83				25826·6
3870·68				25827·6
3870·50				25828·7
3870·27	8			25830·3
3870·07	8			25831·6
3869·78				25833·6
3869·53				25835·2
3869·31				25836·7
3869·20				25837·4
3868·94			7·8	25839·1
3868·73	d g			25840·5
3868·56				25841·6
3868·29				25843·4
3868·14	d g			25844·4
3867·94				25845·8
3867·77				25846·9
3867·54	d g			25848·4
3867·40				25849·4
3867·17	d g			25850·9
3866·95				25852·4
3866·68	d g			25854·2
3866·57				25854·9
3866·37				25856·3
3866·28	d g			25856·9
3866·13	8			25857·9
3865·78				25860·2
3865·67	d g			25860·9
3865·50				25862·1
3865·30	d g	1·16	7·8	25863·4
3865·17				25864·3

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3864·77	d g			25867·0	**3855·06**	4th edge			25932·1
3864·66				25867·8	3854·99				25932·6
3864·44	8			25869·2	3854·82				25933·7
3864·24				25870·5	3854·70				25934·6
3864·16				25871·1	3854·48				25936·0
3863·80				25873·5	3854·21	d g			25937·9
3863·70	d g			25874·1	3854·01				25939·2
3863·52	8			25875·3	3853·88				25940·1
3863·28				25876·9	3853·65				25941·6
3863·09				25878·2	3853·53				25942·4
3862·85				25879·8	3853·36				25943·6
3862·64	8 d g			25881·2	3853·19				25944·7
3862·48				25882·3	3853·06				25945·6
3862·12				25884·7	3852·86				25946·9
3861·98	8			25885·6	3852·54	8			25949·1
3861·86	3rd edge			25886·4	3852·29				25950·8
	d g				3852·01				25952·7
					3851·82				25953·9
					3851·68				25954·9
					3851·41	8			25956·7
3861·70				25887·5	3851·30				25957·5
3861·45				25889·2	3851·02				25959·3
3861·30				25890·2	3850·80	d g			25960·8
3861·15				25891·2	3850·66				25961·8
3860·99				25892·3	3850·44				25963·3
3860·78	8			25893·7	3850·30	8			25964·2
3860·59				25895·0	3850·07	d g			25965·8
3860·37				25896·5	3849·88				25967·0
3860·11	d g			25898·2	3849·61	d g			25968·9
3859·80	8			25900·3	3849·46				25969·9
3859·57				25901·8	3849·14	8			25972·0
3859·40	d g			25903·0	3848·98	n			25973·1
3859·30				25903·6	3848·76				25974·6
3859·09				25905·0	3848·45				25976·7
3858·96				25905·9	3848·35	d g			25977·4
3858·81	8			25906·9	3848·22				25978·2
3858·62	d g			25908·2	3847·98	8			25979·9
3858·39				25909·8	3847·59				25982·5
3858·26	d g			25910·6	3847·41				25983·7
3858·03				25912·2	3847·11	d g			25985·7
3857·82	8			25913·6	3846·95				25986·8
3857·63				25914·8	3846·79				25987·9
3857·49				25915·8	3846·65				25988·8
3857·29				25916·1	3846·44				25990·3
3857·07				25918·6	3846·13				25992·4
3856·82	8			25920·3	3845·93				25992·7
3856·58		1·16	7·8	25921·9	3845·58	8			25996·1
3856·39				25923·2	3845·46				25996·9
3856·17				25924·7	3845·37				25997·5
3856·03				25925·6	3845·15				25999·0
3855·76	8			25927·4	3845·01	8			25999·9
3855·56				25928·8	3844·80	d g			26001·3
3855·45				25929·5	3844·57				26001·9
3855·26				25930·8	3844·35	8			26004·4
					3844·13				26004·9

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3843·94				26006·2	3831·49				26091·7
3843·81	d g	1·15		26008·1	3831·33				26092·8
3843·59				26009·5	3831·15	8			26094·0
3843·46				26010·4	3830·95				26095·4
3843·35				26011·2	3830·75	8			26096·7
3843·12	8			26012·7	3830·47				26098·7
3842·78				26015·0	3830·17				26100·7
3842·57				26016·5	3829·98				26102·0
3842·34				26018·0	3829·74	8			26103·6
3842·08				26019·8	3829·57				26104·8
3841·86	8			26021·2	3829·46				26105·5
3841·62				26022·9	3829·17				26107·5
3841·54				26023·4	3828·97				26108·9
3841·28				26025·2	3828·81				26110·0
3841·07				26026·6	3828·60				26111·4
3840·58	8			26029·9	3828·31	8			26113·4
3840·22				26032·4	3828·05				26115·2
3839·95	8			26034·2	3827·74	d g	1·15	7·9	26117·2
3839·84				26034·0	3827·49				26118·9
3839·60				26036·6	3827·04				26122·0
3839·50		1·15	7·8	26037·3	3826·84	8			26123·3
3839·29	8			26038·7	3826·61				26124·9
3838·85				26041·7	3826·44				26126·0
3838·47				26044·3	3826·30				26127·0
3838·30				26045·4	3826·17				26127·9
3837·97	8			26047·6	3826·03				26128·8
3837·75				26049·1	3825·77				26129·6
3837·54				26050·6	3825·40	8			26132·2
3837·42				26051·4	3825·27				26134·0
3837·22				26052·7	3825·09		1·15	7·9	26135·3
3837·01				26054·2	3824·89				26136·6
3836·64	8			26056·7	3824·65				26138·3
3836·44				26058·0	3824·47				26139·5
3836·23				26059·5	3824·16				26141·6
3835·91				26061·6	3823·90	8			26143·4
3835·67				26063·3	3823·64				26145·2
3835·48				26064·6	3823·40				26146·8
3835·29	8			26065·9	3823·18				26148·3
3835·02				26067·7	3822·95				26149·9
3834·96				26068·1	3822·74				26151·3
3834·72	d g			26069·7	3822·43	8			26153·5
3834·58				26070·7	3822·17				26155·2
3834·34				26071·3	3821·88	8			26157·2
3834·14	d g			26073·7	3821·53				26159·6
3833·93	8			26075·1	3821·30				26161·2
3833·73				26076·5	3820·89	8			26164·0
3833·56				26077·6	3820·69				26165·4
3833·31				26079·3	3820·50				26166·6
3833·18				26080·2	3820·24				26168·5
3833·00				26081·4	3820·03				26169·9
3832·78				26082·9	3819·84				26171·2
3832·55	8			26084·5	3819·52				26173·5
3832·17				26086·1	3819·36	8			26174·5
3831·96	8			26088·5	3819·15				26175·9
3831·75				26089·9	3818·79				26178·4

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
3818·56				26180·0	3804·25		1·14		26278·5
3818·34				26181·5	3804·04				26279·9
3818·21				26182·4	3803·74				26282·0
3817·95				26184·2	3803·62				26282·8
3817·79	8			26185·3	3803·27				26285·3
3817·48				26187·4	3803·16	8			26286·0
3817·24				26189·0	3802·88				26288·0
3817·11				26189·9	3802·30				26292·0
3816·71				26192·5	3801·94				26294·5
3816·36				26195·1	3801·71				26296·1
3816·24	8			26195·9	3801·43	8			26298·0
3815·89				26198·3	3801·21				26299·5
3815·61				26200·2	3800·96				26301·3
3815·33				26202·2	3800·74				26302·8
3815·18				26203·2	3800·65				26303·4
3814·95				26204·8	3800·41				26305·1
3814·67	8			26206·7	3800·14	8			26306·9
3814·44		1·15	7·9	26208·3	3799·73	8			26309·8
3814·08				26210·7	3799·26				26313·0
3813·92				26211·8	3798·98				26315·0
3813·58				26214·2	3798·71				26316·8
3813·42				26215·3	3798·60				26317·6
3813·20				26216·8	3798·17				26320·6
3813·08				26217·6	3798·00	8			26321·8
3812·99				26218·2	3797·78				26323·3
3812·64				26220·6	3797·55				26324·9
3812·29				26223·1	3797·29				26326·7
3812·11				26224·3	3797·02	8			26328·6
3811·78				26226·6	3796·67				26331·0
3811·44	8			26228·9	3796·40				26332·8
3810·88				26232·8	3796·23	8			26334·0
3810·65				26234·3	3795·85				26336·7
3810·37				26236·3	3795·43				26339·6
3810·04				26238·5	3795·13				26341·7
3809·82	8			26240·1	3794·96				26342·8
3809·55				26241·9	3794·67				26344·9
3809·23				26244·1	3794·45				26346·4
3809·13				26244·8	3794·21				26348·1
3808·80				26247·1	3793·84	8			26350·6
3808·48	8			26249·3	3793·52				26352·8
3808·24		1·15	7·9	26250·6	3793·23				26354·9
3808·04				26251·9	3792·98				26356·6
3807·75				26254·0	3792·70	8			26358·5
3807·60				26255·1	3792·48				26360·1
3807·23				26257·8	3792·22	8			26361·9
3806·94				26259·9	3791·96				26363·7
3806·72				26261·5	3791·73				26365·3
3806·51	8			26263·0	3791·53				26366·7
3806·24				26264·9	3791·28				26368·4
3805·88				26267·2	3791·17				26369·2
3805·60				26269·2	3790·91				26371·0
3805·50				26269·8	3790·60				26373·1
3805·24				26271·7	3790·23				26375·7
3804·81	8			26274·6	3790·04				26377·0
3804·58				26276·2	3789·89				26378·1

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3789·58				26380·2	3776·45				26471·9
3789·11				26383·5	3776·28				26473·1
3788·93				26384·8	3776·07	8			26474·6
3788·75				26386·0	3775·59		1·14	8·0	26477·9
3788·58				26387·2	3775·35	8			26479·6
3788·33				26389·0	3775·08				26481·5
3788·18				26390·0	3774·91				26482·7
3788·04				26391·0	3774·68	n			26484·3
3787·96				26391·5	3774·40				26486·3
3787·54				26394·5	3774·16	8			26488·0
3787·27	8			26396·3	3773·84				26490·2
3787·01				26398·2	3773·60	8			26491·9
3786·82				26399·5	3773·31				26494·0
3786·57				26401·2	3773·05				26495·8
3786·32				26403·0	3772·65				26498·6
3786·05			8·0	26404·7	3772·56				26499·2
3785·87				26406·0	3772·24	8			26501·4
3785·64				26407·6	3771·87	8			26504·0
3785·42				26409·1	3771·48				26506·8
3785·11				26411·3	3771·21				26508·7
3784·86				26413·1	3770·96				26510·4
3784·52	n			26415·4	3770·70				26512·1
3783·95				26419·4	3770·32				26514·9
3783·60	8			26421·8	3770·09				26516·6
3783·34				26423·7	3769·85				26518·3
3783·13				26425·1	3769·60				26520·0
3782·69				26428·2	3769·44				26521·1
3782·48				26429·7	3769·00				26524·2
3782·36				26430·5	3768·73		1·13		26526·1
3782·25				26431·3	3768·37	8			26528·7
3781·99				26433·1	3768·25				26529·5
3781·75	8			26434·8	3767·90				26532·0
3781·52				26436·4	3767·66				26533·7
3781·31				26437·9	3767·51				26534·7
3781·11				26439·3	3767·37				26535·7
3780·95				26440·4	3767·27				26536·4
3780·85				26441·1	3767·02				26538·2
3780·58				26443·0	3766·96				26538·6
3780·35				26444·6	3766·63				26540·9
3780·11				26446·3	3766·50				26541·8
3779·87	8			26447·9	3766·39				26542·6
3779·59				26449·9	3766·16				26544·2
3779·36				26451·5	3765·89				26546·1
3779·01				26454·0	3765·65				26547·8
3778·87				26454·9	3765·40				26549·6
3778·59				26456·9	3764·97		1·13	8·0	26552·6
3778·41				26458·2	3764·70				26554·5
3778·21				26459·6	3764·41	8			26556·6
3777·98	8			26461·2	3764·16				26558·3
3777·77				26462·6	3763·90				26560·2
3777·52				26464·4	*3763·65				26561·9
3777·37				26465·4	3763·35				26564·1
3777·18	8			26466·8	3763·05				26566·2
3776·92				26468·6	3762·91				26567·2
3776·79				26469·5	3762·41	8			26570·7

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda+$	$\frac{1}{\lambda}-$				$\lambda+$	$\frac{1}{\lambda}-$	
3762·11				26572·8	3746·52				26683·4
3761·90				26574·1	3746·15	8			26686·1
3761·69				26575·6	3745·94			8·1	26687·5
3761·47				26577·2	3745·69				26689·0
3761·08	8			26580·1	3745·44				26691·1
3760·64				26583·2	3745·15				26693·1
3760·42	8			26584·8	3744·78				26695·7
3760·14				26586·7	3744·19				26699·9
3760·04				26587·5	3744·07	8			26700·8
3759·82				26589·0	3743·74				26703·0
3759·24				26593·1	3743·49				26704·9
3758·62				26595·5	3743·06				26708·0
3758·40	8			26597·1	3742·67				26710·8
3758·10				26599·2	3742·33				26713·2
3757·90				26602·6	3741·96	8			26716·0
3757·60				26604·7	3741·80				26717·0
3757·40				26606·1	3741·37				26720·1
3757·14				26608·0	3741·20				26721·3
3757·02				26608·8	3740·96				26723·0
3756·72				26611·0	3740·60				26725·6
3756·40	8			26613·1	3740·42				26726·9
3756·11				26615·3	3740·14				26728·9
3755·90				26616·8	3739·86	8			26730·9
3755·58				26619·0	3739·63				26731·5
3755·39				26620·4	3739·24				26735·3
3755·25				26621·4	3739·07				26736·5
3754·91				26623·8	3738·51	8			26740·5
3754 63				26625 8	3737·93				26744·7
3754·37				26627·6	3737·74				26746·0
3754·13				26629·3	3737·53				26747·5
3753·69				26632·4	3737·23				26749·7
3753·49				26633·9	3736·58	8	1·13	8·1	26754·3
3753·27				26635·4	3736·17	n			26757·3
3752·95				26637·7	3735·73				26760·4
3752·66				26639·8	3735·57				26761·6
3752·33	8			26642·1	*3735·29				26763·6
3752·07				26644·0	3735·00				26765·7
3751·82				26645·7	3734·64				26768·2
3751·58				26647 4	3734·41				26769·9
3751·15				26650·5	3734·06	n			26772·4
3750·87				26652·5	3733·50	8			26776·4
3750·64				26654·1	3733·13				26779·1
3750·27				26656·8	3732·98				26780·2
3749·94				26659·1	3732·70				26782·2
3749·61				26661·4	3731·89		1·13		26788·0
3749·25				26664·0	3731·65		1·12		26789·7
3748·95				26666·1	3731·37	8			26791·7
3748·73				26667·7	3731·01				26794·1
3748·43				26669·8	3730·74				26796·2
3748·21				26671·4	3730·44				26798·4
3748·06				26672·5	3730·16				26790·4
3747·76				26674·6	3729·73	n			26803·5
3747·52				26676·3	3729·21	8			26807·2
3747·14				26679·0	3728·82	8			26810·0
3746·67				26682·4	3727·74				26817·8

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
3727·48				26819·7	3705·47				26978·9
3727·27				26821·2	3705·11	8, n			26981·5
3727·07	8			26822·6	3704·20				26988·2
3726·86				26824·1	3703·86	n			26990·7
3726·62				26825·9	3703·53				26993·1
3726·23				26828·7	3703·32				26994·6
3725·75				26832·1	3703·10				26996·2
3725·33				26835·2	3702·92	8			26997·5
3724·91	8			26838·2	3702·62				26999·7
3724·47				26841·4	3701·98				27004·4
3723·98				26844·9	3701·65				27006·8
3723·60				26847·6	3701·54				27007·6
3723·19				26850·6	3701·10				27010·8
3722·94				26852·4	3700·71	8			27013·6
3722·74	8			26853·8	3699·94				27019·3
3722·27				26857·2	3699·43				27023·0
3721·41				26863·4	3699·11				27025·3
3720·94				26866·8	3698·90				27026·9
3720·56	8			26869·6	3698·70				27028·3
3720·08	8			26873·0	3698·48	8			27029·9
3719·57				26876·7	3698·26				27031·5
3719·03				26880·6	3697·94		1·12	8·2	27033·9
3718·80				26882·3	3697·47				27037·3
3718·56				26884·0	3697·12	8			27039·9
3718·38	8			26885·3	3696·85				27041·9
3717·53	n			26891·5	3696·58				27043·8
3717·11				26894·5	3696·24	8			27046·3
3717·01				26895·2	3695·81	n			27049·5
3716·50				26898·9	3695·13				27054·4
3716·19	8			26901·2	3694·95				27055·8
3715·74				26904·4	3694·76				27057·2
3715·32				26907·5	3694·27				27060·8
3715·00				26909·8	3694·01	8			27062·7
3714·68				26912·1	3693·74				27064·6
3714·40				26914·2	3693·17	n			27068·8
3713·99	8			26917·1	3691·75	8			27079·2
3713·61				26919·9	3691·17				27083·5
3713·02	8			26924·2	3690·05				27091·7
3712·29	n			26929·5	3689·76				27093·8
3711·81	8			26932·9	3689·51	8			27095·7
3711·39				26936·0	3689·21				27097·9
3711·04				26938·5	3688·47				27103·3
3710·71				26940·9	3687·65				37109·3
3710·41				26943·1	3687·26				27112·2
3709·61	8			26948·9	3686·86				27115·2
3709·40				26950·4	3686·58				27117·2
3709·05				26953·0	3685·97				27121·7
3708·41				26957·4	3685·25				27127·0
3708·02			8.1	26960·5	3685·01	8			27128·8
3707·66			8·2	26963·0	3683·98				27136·4
3707·38				26965·0	3683·69				27138·5
3707·07				26967·3	3683·29				27141·4
3706·72				26969·8	3682·78	8			27145·2
3706·40				26972·2	3682·45				27147·6
3705·71				26977·2	3681·93				27151·5

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
3681·33	8			27155·9	3657·36				27333·8
3680·51	8			27161·9	3657·03				27336·3
3679·75				27167·6	3656·76				27338·3
3679·36	8			27170·1	3656·50				27340·3
3679·11				27172·3	3656·26				27342·1
3678·77				27174·8	3656·08				27343·4
3678·52				27176·7	3655·82	8			27345·3
3678·26	8	1·11	8·2	27178·6	3655·44	n			27348·2
3677·98				27180·6	3655·00				27351·5
3677·66				27183·0	3654·36	n			27356·2
3677·40				27184·9	3653·62	8			27361·8
3677·20				27186·4	3653·23				27364·7
3676·54				27191·3	3652·86				27366·5
3676·27				27193·3	3652·55				27369·8
3676·01	8			27195·2	3652·23				27372·2
3675·51				27198·9	3651·41	8			27378·4
3675·14				27201·6	3650·79	n			27383·0
3674·77				27204·4	3649·74				27390·9
3673·75	8			27211·9	3649·44				27392·2
3673·58				27213·2	3649·18				27395·1
3673·04				27217·2	3648·81			8·3	27397·9
3672·47				27221·4	3648·51				27400·1
3671·98				27225·1	3648·29				27402·8
3671·64				27227·6	3647·99	8			27404·1
3671·50	8			27228·6	3647·67				27406·5
3670·65				27234·9	3647·36				27408·8
3669·74	8			27241·7	3647·00				27411·5
3669·26	8			27245·3	3646·79				27413·1
3668·08				27254·0	3646·34				27416·5
3667·86				27255·7	3645·92				27419·8
3667·68				27257·0	3645·40				27423·6
3667·19				27260·5	3645·14				27425·5
3667·00	8			27262·0	3644·80				27428·0
3666·69				27264·3	3644·67				27429·0
3665·95				27269·8	*3644·26	8			27432·1
3665·61				27272·3	3643·56				27437·4
3664·77	8			27278·5	3643·35				27439·0
3664·44				27281·0	3643·10				27440·8
3664·11				27283·5	3642·81				27443·0
3663·95				27284·6	3642·63	8			27444·4
3663·21				27290·2	3642·27	n			27447·1
3662·97				27292·0	3641·91				27449·8
3662·53	8			27295·2	3641·47				27453·1
3662·22	8, n			27297·5	3641·11	8			27455·8
3661·86				27300·2	3640·70				27458·9
3661·23	n			27304·9	3640·46	8			27460·8
3660·39				27311·2	3640·29				27462·0
3660·29				27311·9	3638·29	8			27477·1
3659·67		1·10		27316·6	3637·27	8			27484·8
3659·32				27319·2	3636·35	8			27491·8
3659·08				27321·0	3636·06				27494·0
3658·83				27322·8	3635·64				27497·2
3658·60				27324·6	3635·48				27498·4
3658·31				27326·7	3635·20	8			27500·5
3658·05	8			27328·7	3634·67	n			27504·5

CYANOGEN (ARC SPECTRUM)—*continued*.

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
3634·10				27508·8	3617·30				27636·5
3633·85				27510·7	3617·19				27637·4
3633·44				27513·8	3617·03				27638·6
*3633·05	8			27516·8	3616·48				27642·8
3632·66				27519·7	3616·23	n			27644·7
3632·22	n			27523·1	3615·91	n			27647·2
3631·91				27525·4	3615·38				27651·2
3631·61	8			27527·7	3615·18				27652·7
3631·21	n			27530·7	3614·81				27655·6
3630·80				27533·8	3614·46				27658·3
3630·62				27535·2	3614·30	n			27659·5
3630·03				27539·7	3614·09	n			27661·1
3629·89				27540·7	3613·78				27663·5
3629·64				27542·6	3613·41				27666·3
3629·31	8			27545·2	3613·26				27667·4
3629·18				27546·1	3612·74	n			27671·4
3628·86	n		8·4	27548·5	3612·56				27672·8
3628·47				27551·4	3612·22				27675·4
3628·15				27553·9	3612·05				27676·7
3627·87				27556·0	3611·84				27678·3
3627·71				27557·2	3611·70				27679·4
3627·57				27558·3	3611·42				27681·5
3627·18				27561·2	3611·20				27683·2
3626·99				27562·7	3610·90				27685·5
3626·46				27566·7	3610·69				27687·1
3626·25				27568·3	3610·53				27688·4
3625·80				27571·7	3610·35				27689·7
3625·68				27572·6	3610·16				27691·2
3625·33	n			27575·3	3609·84				27693·7
3625·00				27577·8	3609·69				27694·8
3624·72				27579·9	3609·48				27695·4
3624·18	8			27583·1	3609·33				27697·6
3624·01				27585·3	3609·17				27698·8
3623·66	n	1·10	8·4	27587·7	3608·98				27700·3
3623·41				27589·3	3608·84				27701·3
3623·14	n			27591·1	3608·70				27702·4
3622·73				27595·1	3608·46				27704·3
3622·58	n			27596·2	3608·33				27705·3
3622·14	n	1·09		27599·6	3608·17				27706·5
3621·84				27601·9	3607·88	8			27708·7
3621·60				27603·7	3607·69				27710·2
3621·17				27607·0	3607·40	8			27712·4
3621·02				27608·1	3607·27				27713·4
3620·55				27611·7	3606·94	8			27715·9
3620·34				27613·3	3606·79				27717·1
3619·90				27616·7	3606·47	8			27719·6
3619·62				27618·8	3606·28				27721·0
3619·32				27621·1	3606·01	8			27723·1
3619·13	8			27622·5	3605·78		1·09	8·4	27724·9
3618·91		1·09	8·4	27624·2	3605·56	8			27726·5
3618·73				27625·6	3605·31				27728·5
3618·43				27627·9	3605·09	8			27730·2
3618·16				27630·0	3604·82				27732·2
3617·76				27633·0	3604·69	8			27733·2
3617·61				27634·2	3604·57				27734·2

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3604·23	8			27736·8
3603·76	n			27740·4
3603·36				27743·5
3603·21				27744·7
3602·92	8, n			27746·9
3602·61				27749·3
3602·49				27750·2
3602·35				27751·3
3602·18				27752·6
3602·04				27753·6
3601·89				27754·8
3601·67				27756·5
3601·58				27757·2
3601·44				27758·3
3601·27				27759·6
3601·12				27760 7
3601·01				27761·6
3600·68				27764·1
3600·60				27764·7
3600·25				27767·5
3599·89	n			27770·2
3599·60	n			27772·5
3599·37				27774·2
3599·19				27775·6
3598·99				27777·2
3598·85				27778·3
3598·60				27780·2
3598·46				27781·3
3598·26				27782·8
3598·12				27783·9
3597·85	8			27786·0
3597·57				27788·2
3597·45				27789·1
3597·25				27790·6
3597·09				27791·9
3596·89				27793·4
3596·73				27794·6
3596·55				27796·0
3596·38				27797·3
3596·19				27798·8
3596·04				27800·0
3595·82				27801·7
3595·63				27803·1
3595·45				27804·5
* 3595·23				27806·2
* 3595·01				27807·9
3594·75				27809·9
3594·55				27811·5
3594·26	8, n			27813·7
3594·07				27815·2
3593·82	8			27817·1
3593·61				27818·8
3593·40	8			27820·4
3593·05				27823·1
3592·92				27824·1

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3592·69				27825·9
3592·34				27828 6
3592·00				27831·2
3591·62				27834·2
3591·28			8·5	27836·8
3591·12				27838·1
3591·03				27838·8
3590·82				27840·4

Fourth Band of the Cyanogen Spectrum

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3590·48	1st edge	1·09	8·5	27842·9
3590·13				27845·6
3590·01				27846·6
3589·87				27847·7
3589·71				27848·9
3589·58				27849·9
3589·43				27851·1
3589·24				27852·6
3589·06				27854·0
3588·87				27855·4
3588·67				27857·0
3588·44				27858·8
3588·22				27860·5
3587·98				27861·3
3587·71				27864·4
3587·46				27866·4
3587·21				27868·3
3586·91				27870·6
3586·64	n			27872·4
3586·28	n	1·08		27875·5
3585·95	2nd edge			27880·2
3585·63				27880·6
3585·35				27882·8
3585·20				27883·9
3585·04				27885·2
3584·88				27886·4
3584·73				27887·6
3584·62				27888·5
3584·44				27889·9
3584·21				27891·7
3584·06	3rd edge			27892·8
3583·83				27894·6
3583·58	8			27896·6
3583·44				27898·4
3583·09				27900·4
3582·84				27902·3
3582·69				27903·5
3582·53				27904·7
3582·44				27905·4
3582·31				27906·4
3582·15				27907·7
3581·97				27909·1

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	$\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	$\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3581·72	8			27911·0	3571·10				27994·1
3581·53				27912·5	3570·91				27995·6
3581·35				27913·9	3570·55	8			27998·4
3581·08	n			27916·0	*3570·40				27999·6
3580·88	n			27917·6	3570·20				28001·1
3580·69				27919·1	3569·92	8			28002·3
3580·59				27919·9	3569·85	8			28003·9
3580·35	8			27921·7	3569·64				28005·5
3580·10				27923·7	3569·38				28007·6
3580·03	8, n			27924·2	3569·13	8			28009·5
3579·81				27925·9	3568·90				28010·3
3579·63				27927·4	3568·75				28012·5
3579·48				27928·5	3568·58				28013·9
3579·22	8, n			27930·6	3568·40	8			28015·3
3578·89	8			27933·1	3568·15				28017·2
3578·58	8	1·08	8·5	27935·5	3568·02				28018·3
3578·46				27936·5	3567·86				28019·5
3578·24	8			27938·2	3567·70				28020·8
3578·03				27939·8	3567·49	8			28022·4
3577·89				27940·9	3567·30				28023·9
3577·67				27942·7	3566·98	8			28026·4
3577·56				27943·5	3566·89	8			28027·1
3577·43				27944·5	3566·63				28029·2
3577·19	8			27946·4	3566·48				28030·4
3576·84	8			27949·1	3566·23	8			28032·3
3576·72				27950·1	3566·01				28034·0
3576·44	8			27952·3	3565·72				28036·3
3576·26				27953·7	3565·55				28037·4
3576·07				27955·2	3565·45				28038·4
3575·69	8			27958·1	3565·14		1·08	8·5	28040·9
3575·56				27959·2	3564·91	8			28042·7
3575·43				27960·2	3564·70				28044·4
3575·27				27961·4	3564·53				28045·7
3575·09	8			27962·8	3564·22				28048·1
3574·86				27964·6	3564·06				28049·4
3574·67				27966·1	3563·92	8			28050·4
3574·46	8			27967·8	3563·54				28054·1
3574·24				27969·5	*3563·32				28055·2
3574·03				27971·1	3563·12				28056·8
3573·83	8			27972·7	3562·97				28058·0
3573·57				27974·7	3562·82				28059·2
3573·32				27976·7	3562·66				28060·4
3573·19				27977·7	3562·39				28062·6
3573·05				27978·8	3562·31				28063·2
3572·88				27980·2	3562·15				28064·4
3572·74				27981·3	3562·02				28065·5
3572·56	8			27982·7	3561·86				28066·7
3572·35				27984·3	3561·56	8 } dg			28069·1
3572·24				27985·2	3561·38	8 }			28070·5
3572·05				27986·6	3560·97				28073·7
3571·89	8			27987·9	3560·71	8			28075·8
3571·67				27989·6	3560·38				28078·4
3571·51				27990·9	3560·24				28079·5
3571·37				27992·0	3560·07				28080·8
3571·23	8			27992·1	3559·95				28081·8

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3559·83				28082·7	3548·63	8			28171·3
3559·71				28083·7	3548·32	8			28173·8
3559·39				28086·2	3548·09				28175·6
3559·25				28087·3	3547·95				28176·7
3559·11				28088·4	3547·75				28178·3
3558·99				28089·4	3547·52				28180·1
3558·70				28091·7	3547·31				28181·8
3558·59				28092·5	3547·14				28183·1
3558·47				28093·5	3546·90	8			28185·0
3558·16				28095·5	3546·71				28186·5
3558·00				28097·1	3546·58				28187·6
*3557·84				28098·4	3546·40				28189·0
3557·64				28100·0	3546·27				28190·0
3557·51				28101·1	3545·99				28192·3
3557·30	8			28102·7	3545·88	8			28193·1
3557·15				28103·9	3545·69				28194·7
3556·85				28106·3	3545·41	n			28196·9
3556·63				28108·0	3545·07	8			28199·6
*3556·41				28109·7	3544·70				28202·5
3556·09	8			28112·3	3544·35				28205·3
3555·86				28114·1	3544·23				28206·3
3555·51				28116·9	3544·11				28207·2
3555·32				28118·4	3543·74				28210·2
3555·16				28119·6	3543·61				28211·2
3555·00				28120·9	3543·46				28212·4
3554·81				28122·4	3543·26				28214·0
3554·63				28123·8	3543·08				28215·4
*3554·44	8			28125·3	3542·85				28217·3
3554·20				28127·2	3542·77				28217·9
3554·00				28129·0	3542·60				28219·3
3553·81			8·6	28130·2	3542·36				28221·2
3553·68	8			28131·2	3542·07				28223·5
3553·49				28132·8	3541·77				28225·9
3553·32				28134·4	3541·43				28228·6
3553·13				28135·6	3541·25				28230·0
3552·94				28137·1	3541·06				28231·5
3552·82	8			28138·1	3540·88				28233·0
3552·45				28141·0	3540·49	8			28236·1
3552·23				28142·7	3540·06	8			28239·5
3552·04				28144·2	3539·76				28241·9
3551·88				28145·5	3539·52				28243·8
3551·77				28146·2	3539·35				28244·2
3551·61				28147·6	3539·19				28246·5
3551·42				28149·2	3538·99				28248·0
3551·18				28151·1	3538·87				28249·0
3550·94				28153·0	3538·58	n			28251·3
3550·66		1·07	8·6	28155·2	3538·37				28253·0
3550·35				28157·6	3538·21				28254·3
3550·00				28160·4	3538·11				28255·1
3549·89				28161·3	3537·91				28256·7
3549·64				28163·3	3537·62	8			28259·0
3549·48				28164·5	3537·39	n			28260·8
3549·20				28166·8	3536·87				28265·0
3549·07	8			28167·8	3536·64	n			28266·8
3548·78				28170·1	3536·27				28269·8

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
3536·14				28270·8	3522·36	n			28381·5
3535·99				28272·0	3522·07				28383·8
3535·79	n			28273·6	3521·85				28385·6
3535·66				28274·7	3521·65				28387·2
3535·51	n			28275·9	3521·36				28389·5
3535·28		1·07	8·6	28277·7	3521·15				28391·2
3535·01				28279·9	3520·94				28392·9
3534·71	8			28282·3	3520·78				28393·2
3534·22	n			28286·2	3520·53				28395·2
3533·86				28289·1	3520·28				28397·2
3533·64	n			28290·8	3519·97	8			28400·7
3533·40				28292·8	3519·73				28402·7
3532·99				28296·0	3519·23				28406·7
3532·88				28296·9	3519·00				28408·6
3532·70				28298·4	3518·80				28410·2
3532·53				28299·7	3518·57				28412·0
3532·36				28301·1	3518·14	n			28415·5
3532·02				28303·8	3517·91				28417·4
3531·73	n			28306·1	3517·68				28419·2
3531·43				28308·5	3517·40				28421·5
3531·13				28310·5	3517·12	8			28423·8
3531·08	n			28311·3	3516·64				28427·7
3530·72				28314·2	3516·42			8·7	28429·3
3530·52				28315·8	*3516·31				28430·2
3530·31	8			28317·5	3515·98	n			28432·9
3530·23				28318·2	3515·87				28433·8
3529·94				28320·5	3515·18				28439·3
3529·72				28322·3	3514·90				28441·6
3529·46				28324·5	3514·65				28443·6
*3529·23	n			28326·2	3514·40				28445·7
3528·71	8			28330·4	3514·15				28447·7
3528·40				28332·9	3514·02				28448·7
3528·10	n			28335·3	3513·83		1·06		28450·3
3527·70	8			28338·5	3513·22				28454·2
3527·46				28340·4	3512·75	8			28459·0
3526·95				28344·5	3512·49				28461·1
3526·78				28345·9	3512·32				28462·5
3526·56				28347·6	3512·20				28463·5
3526·40				28348·9	3511·92				28465·7
3526·20				28351·5	3511·61	8			28468·3
3526·04				28351·8	3511·29	n			28470·9
3525·80				28353·8	3510·53				28477·0
3525·60				28355·4	3510·34	8			28479·6
3525·47				28356·4	3509·81	n			28482·9
3525·28				28357·9	3509·44	8			28485·9
3525·13				28359·1	3509·10				28488·6
3524·66	8			28362·9	3508·45				28493·9
3524·47	8			28364·5	3508·33				28494·9
3523·99				28368·3	3507·87				28498·6
3523·73				28370·4	3507·72				28499·8
3523·47	8			28372·5	3507·52				28501·5
3523·23				28374·4	3507·23				28503·8
3523·00				28375·3	3507·03				28505·5
3522·82				28377·8	3506·61	8			28508·9
3522·49				28380·4	3506·38				28510·7

CYANOGEN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3506·12				28512·9	3494·91				28604·3
3505·64				28516·8	3494·52				28607·5
3505·38				28518·9	3494·00				28611·8
3505·18				28520·5	3493·80				28613·4
3504·69				28524·5	3493·67				28614·5
3504·52				28525·9	3492·73				28621·2
3504·14				28529·0	3492·29				28625·8
3503·79	8			28531·8	3491·93		1·06	8·7	28628·8
3503·24				28536·3	3491·50				28632·3
3502·88				28539·2	3491·07				28635·9
3502·73				28540·5	3490·72				28638·7
3501·90				28547·2	3490·48				28640·7
3501·63	8			28549·4	3490·19				28643·0
3501·33				28551·9	3489·39				28649·6
3501·02				28554·4	3488·87				28653·9
3500·50				28558·7	3488·49				28657·0
3500·36				28559·8	3488·19				28659·5
3499·72				28565·0	3487·61				28664·2
3499·39				28567·7	3487·09				28668·5
3499·09				28570·2	3486·33				28674·8
3498·64				28573·8	3486 06				28677·0
3498·25				28577·0	3485·37				28682·7
3497·85				28580·3	3484·99				28685·8
3497·17	8, n			28585·8	3484·59				28689·1
3496·57				28590·8	3483·81				28695·5
3496·33				28592·7	3483·05				28701·8
3496·03				28595·2	3482·74				28704·3
3495·42				28600·2	3482·41				28707·1
3495·22				28601·8					

* Eder and Valenta observed (*Denkschr. Kais. Akad. Wissensch. Wien*, lx. 1893) in the spark-spectrum between carbon-electrodes in air the 'edges' 4216, 4197, 4181, 4167, 4157 of the second band; 3883·8, 3872·0, 3861·6, 3854·5 of the third band; 3590·1, 3585·6, 3584 of the fourth band; and 3361·0.

The following revised table of corrections for reduction to vacuo is derived from measurements of the refractive index of air by Professors Kayser and Runge.[1] They have obtained the following values :—

Wave-length	Refractive Index of Air: At 16° C. × 760 mm.	Refractive Index of Air: At 0° C. × 760 mm.
5630	1·0002761	1·0002924
4430	1·0002788	1·0002952
4200	1·0002799	1·0002964
3250	1·0002864	1·0003033
2860	1·0002913	1·0003085
2850	1·0002919	1·0003091
2550	1·0002980	1·0003155
2360	1·0003037	1 0003216

The numbers of the last column are given very accurately by the formula $\mu = 1{\cdot}00028817 + 1{\cdot}316\,\lambda^{-2} + 31600\lambda^{-4}$, λ being expressed in millionths of a millimetre.

[1] *Abhandl. königl. Preuss. Akad. Wissensch.*, Berlin; 1893, 'Astronomy and Astrophysics,' No. 115.

Table of Corrections to be applied to Wave-lengths measured in Air at 20° C. × 760 mm. applicable to Rowland's standard wave-lengths and all wave-lengths determined from them.

Between 8003	and 7966	add 2·16
7966	7928	2·15
7928	7891	2·14
7891	7853	2·13
7853	7815	2·12
7815	7777	2·11
7777	7740	2·10
7740	7702	2·09
7702	7664	2·08
7664	7626	2·07
7626	7589	2·06
7589	7551	2·05
7551	7513	2·04
7513	7475	2·03
7475	7438	2·02
7438	7399	2·01
7399	7362	2·00
7362	7324	1·99
7324	7286	1·98
7286	7248	1·97
7248	7211	1·96
7211	7173	1·95
7173	7136	1·94
7136	7099	1·93
7099	7062	1·92
7062	7025	1·91
7025	6988	1·90
6988	6950	1·89
6950	6912	1·88
6912	6874	1·87
6874	6835	1·86
6835	6797	1·85
6797	6759	1·84
6759	6721	1·83
6721	6683	1·82
6683	6646	1·81
6646	6608	1·80
6608	6570	1·79
6570	6533	1·78
6533	6495	1·77
6495	6457	1·76
6457	6420	1·75
6420	6382	1·74
6382	6344	1·73
6344	6307	1·72
6307	6269	1·71
6269	6231	1·70
6231	6194	1·69
6194	6156	1·68
6156	6118	1·67
6118	6081	1·66
6081	6043	1·65
6043	6005	1·64
6005	5968	1·63
5968	5930	1·62
5930	5893	1·61
5893	5855	1·60
5855	5817	1·59
5817	5779	1·58
Between 5779	and 5742	add 1·57
5742	5704	1·56
5704	5666	1·55
5666	5628	1·54
5628	5591	1·53
5591	5553	1·52
5553	5515	1·51
5515	5477	1·50
5477	5440	1·49
5440	5402	1·48
5402	5364	1·47
5364	5326	1·46
5326	5289	1·45
5289	5251	1·44
5251	5213	1·43
5213	5175	1·42
5175	5138	1·41
5138	5101	1·40
5101	5064	1·39
5064	5027	1·38
5027	4991	1·37
4991	4954	1·36
4954	4917	1·35
4917	4879	1·34
4879	4842	1·33
4842	4805	1·32
4805	4767	1·31
4767	4730	1·30
4730	4693	1·29
4693	4655	1·28
4655	4618	1·27
4618	4581	1·26
4581	4543	1·25
4543	4506	1·24
4506	4469	1·23
4469	4431	1·22
4431	4394	1·21
4394	4357	1·20
4357	4319	1·19
4319	4281	1·18
4281	4244	1·17
4244	4206	1·16
4206	4169	1·15
4169	4131	1·14
4131	4094	1·13
4094	4055	1·12
4055	4016	1·11
4016	3976	1·10
3976	3937	1·09
3937	3897	1·08
3897	3857	1·07
3857	3817	1·06
3817	3777	1·05
3777	3738	1·04
3738	3698	1·03
3698	3658	1·02
3658	3618	1·01
3618	3578	1·00
3578	3538	0·99

Between	3538 and	3499	add 0·98	Between	2825 and	2784	add 0·80
	3499	3459	0·97		2784	2742	0·79
	3459	3418	0·96		2742	2699	0·78
	3418	3378	0·95		2699	2655	0·77
	3378	3339	0·94		2655	2610	0·76
	3339	3300	0·93		2610	2565	0·75
	3300	3260	0·92		2565	2518	0·74
	3260	3221	0·91		2518	2470	0·73
	3221	3182	0·90		2470	2422	0·72
	3182	3142	0·89		2422	2374	0·71
	3142	3102	0·88		2374	2326	0·70
	3102	3063	0·87		2326	2278	0·69
	3063	3023	0·86		2278	2230	0·68
	3023	2983	0·85		2230	2181	0·67
	2983	2943	0·84		2181	2133	0·66
	2943	2904	0·83		2133	2075	0·65
	2904	2865	0·82		2075	2026	0·64
	2865	2825	0·81		2026	1976	0·63

Table of Corrections to be applied to Oscillation Frequencies in Air of 20° C. × 760 mm. derived from Rowland's standard wave-length determinations.

Between	12342 and	12730	subtract 3·4	Between	25581 and	26190	subtract 7·3
	12730	13117	3·5		26190	26502	7·4
	13117	13500	3·6		26502	26821	7·5
	13500	13877	3·7		26821	27146	7·6
	13877	14250	3·8		27146	27477	7·7
	14250	14621	3·9		27477	27815	7·8
	14621	14989	4·0		27815	28153	7·9
	14989	15352	4·1		28153	28484	8·0
	15352	15712	4·2		28484	28809	8·1
	15712	16068	4·3		28809	29128	8·2
	16068	16421	4·4		29128	29440	8·3
	16421	16773	4·5		29440	29752	8·4
	16773	17124	4·6		29752	30073	8·5
	17124	17474	4·7		30073	30403	8·6
	17474	17823	4·8		30403	30742	8·7
	17823	18168	4·9		30742	31090	8·8
	18168	18512	5·0		31090	31436	8·9
	18512	18855	5·1		31436	31774	9·0
	18855	19197	5·2		31774	32104	9·1
	19197	19540	5·3		32104	32426	9·2
	19540	19884	5·4		32426	32740	9·3
	19884	20226	5·5		32740	33054	9·4
	20226	20566	5·6		33054	33360	9·5
	20566	20904	5·7		33360	33658	9·6
	20904	21240	5·8		33658	33948	9·7
	21240	21574	5·9		33948	34230	9·8
	21574	21906	6·0		34230	34517	9·9
	21906	22236	6·1		34517	34809	10·0
	22236	22564	6·2		34809	35107	10·1
	22564	22890	6·3		35107	35411	10·2
	22890	23207	6·4		35411	35720	10·3
	23207	23509	6 5		35720	36029	10·4
	23509	23807	6·6		36029	36346	10·5
	23807	24101	6·7		36346	36667	10·6
	24101	24392	6·8		36667	36992	10·7
	24392	24682	6·9		36992	37325	10·8
	24682	24976	7·0		37325	37661	10·9
	24976	25276	7·1		37661	37994	11·0
	25276	25581	7·2		37994	38321	11·1

Between	38321	and	38632	subtract 11·2
	38632		38930	11 3
	38930		39227	11·4
	39227		39520	11·5
	39520		39809	11·6
	39809		40094	11·7
	40094		40375	11·8
	40375		40648	11·9
	40648		40918	12·0
	40918		41182	12·1
	41182		41442	12·2
	41442		41700	12·3
	41700		41960	12·4
	41960		42216	12·5
	42216		42468	12·6
	42468		42716	12·7
	42716		42963	12·8
	42963		43209	12·9
	43209		43454	13·0
	43454		43697	13·1
	43697		43938	13·2
	43938		44180	13·3
	44180		44423	13·4
	44423		44664	13·5
	44664		44904	13·6
	44904		45142	13·7
	45142		45377	13·8

Between	45377	and	45611	subtract 13·9
	45611		45844	14·0
	45844		46076	14·1
	46076		46308	14·2
	46308		46540	14·3
	46540		46774	14·4
	46774		47008	14·5
	47008		47242	14·6
	47242		47476	14·7
	47476		47709	14·8
	47709		47942	14·9
	47942		47175	15·0
	47175		47407	15·1
	47407		47639	15·2
	47639		48870	15·3
	48870		49100	15·4
	49100		49330	15·5
	49330		49560	15·6
	49560		49790	15·7
	49790		50020	15·8
	50020		50250	15·9
	50250		50480	16·0
	50480		50710	16·1
	50710		50940	16·2
	50940		51170	16·3
	51170		51400	16·4

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APPENDIX F.

Chromium (Arc Spectrum).

Hasselberg: 'Kongl. Svenska Vetenskaps-Akadem. Handl.,' Bd. 26, No. 5, 1894.

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		λ+	$\frac{1}{\lambda}$−				λ+	$\frac{1}{\lambda}$−	
*5797·02	1	1·58	4·7	17245·5	5432·56	1	1·48	5·0	18402·5
5792·00	1	,,	,,	17260·5	*5409·99	10	,,	,,	18479·3
*5791·20	6	,,	,,	17262·9	*5405·22	2	,,	,,	18495·6
5788·63	1·5	,,	,,	17270·5	5400·82	4	1·47	5·1	18510·6
*5788·15	5	,,	,,	17272·0	5391·57	2	,,	,,	18542·4
5787·26	1·5	,,	,,	17274·6	*5390·60	2	,,	,,	18545·7
5786·00	3	,,	,,	17278·4	*5387·76	3	,,	,,	18555·5
*5785·21	4	,,	,,	17280·7	*5387·17	3	,,	,,	18557·5
*5784·09	4	,,	,,	17284·1	5377·82	1	,,	,,	18589·8
*5783·32	3	,,	,,	17286·4	*5373·92	1·5	,,	,,	18603·3
*5782·01	2	,,	,,	17290·3	*5370·57	1·5	,,	,,	18614·9
*5781·43	2	,,	,,	17292·1	*5368·73	1·5	,,	,,	18621·3
5781·20	1·5	,,	,,	17292·7	*5348·50	8	1·46	,,	18691·7
*5753·88	1·5	1·57	,,	17374·9	*5345·98	8	,,	,,	18700·5
5746·65	1·5	,,	,,	17396·7	5344·98	1·5	,,	,,	18704·0
5738·77	1·5	1·56	,,	17420·7	*5340·66	2	,,	,,	18719·2
5736·88	1	,,	,,	17426·4	*5329·91	3n	,,	,,	18757·0
5729·42	1·5	,,	,,	17449·1	*5329·30	4n	,,	,,	18759·1
5720·06	1·5	,,	4·8	17477·5	†*5328·50	8n	,,	,,	18761·9
*5713·03	3	,,	,,	17499·0	*5318·97	2	1·45	,,	18795·5
*5712·87	1·5	,,	,,	17499·5	*5313·05	2	,,	,,	18816·5
*5702·56	3	1·55	,,	17531·2	*5304·37	2	,,	,,	18847·3
5700·75	1·5	,,	,,	17536·7	*5300·90	5	,,	5·2	18859·6
*5698·55	4	,,	,,	17543·5	*5298·43	8	,,	,,	18868·3
*5694·93	3	,,	,,	17554·7	*5298·14	4n	,,	,,	18869·4
5683·76	1n	,,	,,	17589·2	*5297·52	5n	,,	,,	18871·6
5682·67	2n	,,	,,	17592·6	*5296·86	8	,,	,,	18873·9
5681·39	1·5n	,,	,,	17596·5	5293·57	1	,,	,,	18885·6
5674·42	1	,,	,,	17618·1	*5287·36	1·5	1·44	,,	18907·8
*5664·26	3	1·54	,,	17649·8	*5280·48	1·5	,,	,,	18932·5
*5658·85	1·5	,,	,,	17666·5	*5276·20	6	,,	,,	18947·8
5649·60	2	,,	,,	17695·5	*5275·85	4	,,	,,	18949·1
5642·60	1·5	,,	,,	17717·5	*5275·31	6	,,	,,	18951·0
*5638·35	1	,,	,,	17730·9	†*5273·57	2	,,	,,	18957·3
*5628·87	3	,,	,,	17760·7	*5272·17	2	,,	,,	18962·3
*5480·71	3	1·50	5·0	18240·8	*5265·88	6	,,	,,	18985·0
*5464·16	3	1·49	,,	18296·1	*5265·31	3	,,	,,	18987·0
5442·61	2	,,	,,	18368·5	*5261·32	8	,,	,,	18990·6

* Coincident with a solar line. ‡ See Calcium.
† See Iron. § See Nickel.

Rowland's Normal solar lines (on which these measurements of the Chromium lines rest) are given at the foot of page 8.

Chromium (Arc Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ−	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ−	Oscillation Frequency in Vacuo
‡*5261·91	2	1·44	5·2	18999·3	*4936·51	4	1·35	5·6	20251·6
*5255·27	4	,,	,,	19023·3	4930·36	1·5	,,	,,	20276·9
*5255·08	3	,,	,,	19024·0	*4922·40	5	,,	,,	20309·7
*5247·68	6	1·43	,,	19050·8	*4921·11	2	,,	,,	20315·0
*5243·53	2	,,	,,	19065·9	4903·40	3	1·34	,,	20388·4
5241·62	1	,,	,,	19072·9	4888·69	2	,,	,,	20449·8
*5240·62	1	,,	,,	19076·5	4887·15	4	,,	,,	20456·2
*5239·13	2	,,	,,	19081·9	*4886·11	1·5	,,	,,	20460·6
*5228·25	1·5	,,	,,	19121·7	*4885·92	3	,,	,,	20461·4
†*5227·04	1·5	,,	,,	19126·1	4885·12	1·5	,,	,,	20464·7
*5225·98	1·5	,,	,,	19130·0	4874·81	1	1·33	,,	20508·0
*5225·17	1·5	,	,,	19132·9	*4870·96	5	,,	,,	20524·2
*5225·08	4	,,	,,	19133·3	*4862·00	4	,,	5·7	20561·9
*5224·70	1·5	,,	,,	19134·7	4861·38	2	,,	,,	20564·6
*5224·22	1	,,	,,	19136·4	4857·50	1	,,	,,	20581·0
*5222·83	1	,,	,,	19141·5	4855·32	1	,,	,,	20590·3
*5221·90	2	,,	,,	19144·9	*4851·65	1·5	,,	,,	20605·8
*5221·06	1·5	,,	,,	19148·0	*4848·39	1	,,	,,	20619·7
*5214·30	1·5	,,	,,	19172·8	*4837·00	1·5	1·32	,,	20668·2
†*5208·58	10nr	1·42	5·3	19193·8	*4831·79	1·5	,,	,,	20690·6
5206·20	10nr	,,	,,	19202·6	*4829·50	4	,,	,,	20700·4
†5204·67	10nr	,,	,,	19208·2	*4824·31	1	,,	,,	20722·7
*5200·33	1·5	,,	,,	19224·2	4824·10	1	,,	,,	20723·6
*5196·60	4	,,	,,	19238·1	4816·31	1·5	,,	,,	20757·1
*5193·66	1·5	,,	,,	19248·9	*4814·44	1·5	,,	,,	20765·1
*5192·17	3	,,	,,	19254·5	*4810·91	1·5	,,	,,	20780·4
§*5184·73	2	,,	,,	19282·1	*4806·44	1·5	,,	,,	20799·7
*5177·58	2	,,	,,	19308·7	*4801·17	4	1·31	,,	20822·6
*5166·41	3	1·41	,,	19350·5	*4796·29	2	,,	,,	20843·7
*5161·98	1·5	,,	,,	19367·1	*4792·61	4	,,	,,	20859·8
*5144·87	1·5	,,	,,	19431·5	*4790·44	2	,,	,,	20869·2
*5142·46	1	,,	,,	19440·6	*4789·45	5	,,	,,	20873·5
*5139·82	3	,,	,,	19450·6	*4783·16	1·5n	,,	5·8	20900·9
*5123·64	2	1·40	,,	19512·1	*4775·25	1·5	,,	,,	20935·5
5122·98	1	,,	,,	19514·6	4774·63	1	,,	,,	20938·2
*5122·30	1·5	,,	,,	19517·2	*4770·80	1	,,	,,	20955·0
*5113·31	1·5	,,	5·4	19551·4	*4767·98	2	,,	,,	20967·4
5112·70	1	,,	,,	19553·7	*4767·40	1·5	,,	,,	20970·0
*5110·93	2	,,	,,	19560·5	*4766·77	2	1·30	,,	20972·8
*5092·08	1	1·39	,,	19632·9	4764·81	1·5	,,	,,	20981·4
5078·92	1	,,	,,	19683·8	*4764·45	3	,,	,,	20983·0
*5073·10	2	,,	,,	19706·4	*4761·43	1	,,	,,	20996·3
*5068·50	1	,,	,,	19724·3	†*4757·76	1·5	,,	,,	21012·5
*5067·90	2	,,	,,	19726·6	4757·49	1·5	,,	,,	21013·7
*5066·10	1·5	,,	,,	19733·6	*4756·30	4	,,	,,	21018·9
*5052·10	2	1·38	,,	19788·3	*4755·36	1·5	,,	,,	21023·2
5048·96	1	,,	,,	19800·7	§*4754·95	1·5	,,	,,	21024·9
*5022·12	1	1·37	5·5	19906·4	4754·10	1	,,	,,	21028·7
*5013·48	3	,,	,,	19940·7	§*4752·27	3	,,	,,	21036·8
*5004·60	1	,,	,,	19976·1	*4745·48	2	,,	,,	21066·9
*4986·16	1	1·36	,,	20050·0	4743·30	1	,,	,,	21076·6
*4965·02	3	,,	,,	20135·4	4741·27	1	,,	,,	21085·6
*4954·92	4	,,	,,	20176·5	*4737·50	4	,,	,,	21102·4
4953·87	1	1·35	,,	20180·7	*4730·88	4	,,	,,	21131·9
*4942·63	4	,,	5·6	20226·5	*4729·89	2	1·29	,,	21136·3

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*4727·33	3	1·29	5·8	21148·1	*4626·07	1·5	1·27	6·0	21610·6
*4724·60	3	,,	,,	21160·0	4625·46	1	,,	,,	21613·5
*4723·28	3	,,	,,	21165·9	*4622·89	2	,,	,,	21625·5
*4722·90	1·5	,,	,,	21167·6	*4622·60	4	,,	,,	21626·9
*4718·57	6	,,	,,	21187·1	*4622·07	4	,,	,,	21629·3
4717·87	1·5	,,	,,	21190·2	*4619·70	3	,,	,,	21640·4
*4708·16	6	,,	,,	21233·9	*4616·28	6	1·26	,,	21656·5
4706·25	1·5	,,	5·9	21242·4	4614·92	1·5	,,	,,	21662·8
*4700·77	2	,,	,,	21267·2	§4614·70	1·5	,,	,,	21663·9
4699·76	1·5	,,	,,	21271·8	*4614·34	1·5	,,	,,	21665·6
4699·12	1·5	,,	,,	21274·7	*4613·54	5	,,	,,	21669·3
4698·77	4	,,	,,	21276·3	4612·15	1·5	,,	,,	21675·9
†4698·60	4	,,	,,	21277·0	*4610·07	1·5	,,	,,	21685·6
4697·57	1·5	,,	,,	21281·7	4606·55	1·5	,,	,,	21712·2
*4697·20	3	,,	,,	21283·4	*4601·18	2	,,	,,	21727·6
*4695·32	2	,,	,,	21291·9	*4600·92	6	,,	,,	21728·8
*4694·12	3	,,	,,	21297·4	*4600·25	3	,,	,,	21731·9
*4689·54	4	1·28	,,	21318·2	*4598·60	1·5	,,	,,	21739·7
§*4686·38	1·5	,,	,,	21332·5	*4595·78	4	,,	,,	21753·1
*4684·77	1·5	,,	,,	21339·9	4594·57	1·5	,,	,,	21758·7
*4681·01	2	,,	,,	21357·0	*4591·56	6	,,	,,	21773·1
*4680·65	2	,,	,,	21358·7	4590·88	1·5	,,	,,	21776·3
*4673·30	1·5	,,	,,	21392·3	*4588·38	1·5	,,	,,	21788·2
*4669·86	1·5s	,,	,,	21408·0	4586·31	2	,,	,,	21798·0
*4669·50	3	,,	,,	21409·7	4585·23	1·5	,,	,,	21803·2
4667·36	2	,,	,,	21419·5	4585·08	1·5	,,	,,	21803·9
*4666·67	4	,,	,,	21422·7	4584·25	1·5	,,	,,	21807·8
*4666·35	3	,,	,,	21424·1	4584·02	1·5	,,	,,	21808·9
*4666·07	3	,,	,,	21425·4	4581·22	1·5	,,	,,	21822·2
*4664·94	4	,,	,,	21430·6	*4580·22	5	1·25	,,	21827·0
*4663·98	4	,,	,,	21435·0	4578·55	1·5	,,	,,	21835·0
*4663·47	4	,,	,,	21437·4	4575·26	2	,,	,,	21850·7
4657·00	1·5	,,	,,	21467·1	*4574·63	1	,,	,,	21853·7
*4656·61	1·5	,,	,,	21468·9	*4571·85	4	,,	,,	21867·0
*4656·34	2	,,	,,	21470·2	*4571·27	1·5	,,	,,	21869·8
4654·90	3	,,	,,	21476·8	*4569·76	5	,,	,,	21877·0
*4654·24	2n	1·27	,,	21479·9	*4565·71	4	,,	,,	21896·4
*4652·31	7	,,	,,	21488·8	*4564·36	2	,,	6·1	21902·8
*4651·44	7	,,	,,	21492·8	4563·82	3	,,	,,	21905·4
*4649·58	3	,,	,,	21501·4	*4563·43	1·5	,,	,,	21907·2
*4649·04	3	,,	,,	21503·9	*4558·81	2	,,	,,	21929·4
4648·27	2	,,	,,	21507·5	*4556·32	3	,,	,,	21941·4
*4648·00	1·5	,,	,,	21508·7	4555·45	1·5	,,	,,	21945·6
*4646·96	1·5	,,	,,	21513·5	4554·98	2	,,	,,	21947·9
*4646·33	7	,,	,,	21516·5	4554·10	1·5	,,	,,	21952·1
4642·21	1·5	,,	,,	21535·6	*4546·15	6	,,	,,	21990·5
*4639·85	1·5	,,	,,	21546·5	*4545·51	3	,,	,,	21993·6
*4639·69	2	,,	,,	21547·3	*4544·77	5	,,	,,	21997·2
*4637·92	3	,,	,,	21555·5	*4543·99	1·5	,,	,,	22001·0
*4637·35	3	,,	,,	21558·1	*4542·83	2	1·24	,,	22006·6
*4634·23	1·5	,,	6·0	21572·6	*4541·70	2	,,	,,	22012·1
*4633·45	2	,,	,,	21576·2	*4541·25	3	,,	,,	22014·3
*4632·32	2	,,	,,	21581·5	*4540·90	6	,,	,,	22016·0
*4627·83	1	,,	,,	21602·4	*4540·70	6	,,	,,	22016·9
*4626·31	6	,,	,,	21609·5	*4539·96	4	,,	,,	22020·5

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		λ+	$\frac{1}{\lambda}$−				λ+	$\frac{1}{\lambda}$−	
*4535·95	6	1·24	6·1	22050·0	†4422·84	1·5	1·21	6·3	22603·6
*4535·36	3	"	"	22052·9	4421·12	1	"	"	22612·4
*4530·92	6	"	"	22064·5	*4419·26	1	"	"	22621·9
4530·04	3	"	"	22068·8	*4414·00	2	"	"	22648·9
*4527·65	3	"	"	22080·4	*4412·42	2	"	"	22657·0
*4527·53	4	"	"	22081·0	*4411·26	2	"	"	22663·0
*4526·65	6	"	"	22085·3	4411·15	1·5	"	"	22663·5
*4526·26	3	"	"	22087·2	*4410·47	2	"	"	22667·0
4525·01	2	"	"	22093·3	4406·45	1	"	"	22687·7
4522·18	1·5	"	"	22107·1	*4403·68	2	"	"	22702·0
4521·30	3	"	"	22111·4	*4403·55	2	"	"	22702·6
4515·60	3	"	"	22139·4	*4399·97	1·5	"	"	22721·1
*4514·64	3	"	"	22144·1	*4397·40	2	"	"	22734·4
*4512·05	4	"	"	22156·8	4395·58	1·5	"	"	22743·8
*4507·00	3	"	"	22181·6	*4395·00	1n	"	"	22746·8
*4501·92	2	1·23	"	22206·6	*4393·66	1·5	1·20	"	22753·8
*4501·24	3	"	"	22210·0	*4392·41	1	"	"	22760·2
*4500·42	3	"	"	22214·0	*4391·90	3	"	"	22762·9
*4498·87	3	"	"	22221·7	4387·64	3	"	"	22785·0
*4497·02	5	"	6·2	22230·8	4387·54	1·5	"	"	22785·5
4495·42	1·5	"	"	22238·7	*4385·11	6	"	"	22798·2
*4492·45	3	"	"	22253·4	4383·04	1·5	"	"	22808·9
*4491·99	1·5	"	"	22255·6	*4381·25	2	"	"	22818·2
*4491·81	2n	"	"	22256·5	*4380·73	1	"	"	22820·9
*4490·70	1·5n	"	"	22262·0	*4379·93	1·5	"	"	22825·1
*4489·60	2	"	"	22267·5	*4377·73	1·5	"	"	22836·6
4488·18	2	"	"	22274·5	†*4376·95	2	"	"	22840·7
*4483·01	2	"	"	22300·2	*4375·52	3	"	"	22848·1
4481·57	1·5	"	"	22307·4	*4374·34	4	"	"	22854·3
*4480·40	1·5	"	"	22313·2	4373·83	1·5	"	"	22857·0
†*4475·47	2n	"	"	22337·8	*4373·41	4	"	"	22859·2
4473·91	1·5	"	"	22345·6	*4371·44	6	"	"	22869·5
*4467·72	1·5	1·22	"	22376·6	§*4368·42	1·5	"	6·4	22885·2
4466·33	1·5	"	"	22383·5	*4363·25	3	"	"	22912·3
*4465·54	2	"	"	22387·5	4360·17	1·5	"	"	22928·5
*4465·31	1	"	"	22388·7	*4359·78	6	"	"	22930·5
4465·08	2	"	"	22389·8	*4358·86	1	"	"	22935·4
†*4464·84	1·5	"	"	22391·0	*4357·70	1·5	"	"	22941·5
4462·98	1·5	"	"	22400·3	*4356·91	1·5	1·19	"	22945·6
*4460·95	1·5	"	"	22410·6	*4351·91	8	"	"	22972·0
*4459·95	3	"	"	22415·6	*4351·20	6	"	"	22975·8
*4459·56	1·5	"	"	22417·5	*4347·00	3	"	"	22998·0
*4458·75	3	"	"	22421·6	*4344·66	7	"	"	23010·4
*4443·90	1·5	"	"	22496·6	4343·32	1·5	"	"	23017·5
4442·43	1·5	"	"	22504·0	*4340·26	3	"	"	23033·7
4432·93	1	"	"	22552·2	*4339·85	6	"	"	23035·9
*4432·30	3n	"	"	22555·4	*4339·60	6	"	"	23037·2
4430·59	2	1·21	6·3	22564·1	*4338·95	1·5	"	"	23040·7
4430·07	1·5	"	"	22566·7	*4338·56	1·5	"	"	23042·7
*4428·71	2	"	"	22573·6	*4337·70	3	"	"	23047·3
4427·85	1	"	"	22578·0	*4337·38	2	"	"	23049·0
*4425·27	1	"	"	22591·2	*4332·75	1·5	"	"	23073·6
*4424·40	3	"	"	22595·6	4325·24	1·5	"	"	23113·7
*4424·20	1·5	"	"	22596·7	*4323·70	2	"	"	23121·9
4423·46	1·5	"	"	22600·4	*4321·80	2	"	"	23132·1

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
4321·44	1·5	1·19	6·4	23134·0	*4207·05	1·5	1·16	6·6	23763·0
*4320·75	1·5	,,	,,	23137·7	*4204·61	2	1·15	,,	23776·8
*4319·82	2	,,	,,	23142·7	*4204·37	1·5	,,	,,	23778·2
*4312·65	1·5	1·18	,,	23181·2	*4203·71	3	,,	,,	23781·9
*4307·65	1·5	,,	6·5	23208·0	*4200·27	2	,,	6·7	23801·3
†*4305·61	2	,,	,,	23219·0	4198·65	3	,,	,,	23810·5
*4302·95	1·5	,,	,,	23233·4	*4197·38	2	,,	,,	23817·7
*4301·33	2	,,	,,	23242·1	4195·09	2	,,	,,	23830·7
*4300·68	2	,,	,,	23245·6	4193·80	2	,,	,,	23838·0
4299·87	2	,,	,,	23250·0	4192·25	2s	,,	,,	23846·8
*4297·91	3	,,	,,	23260·6	4191·90	1·5	,,	,,	23848·8
4297·21	2	,,	,,	23264·4	*4191·41	2	,,	,,	23851·6
*4296·81	1	,,	,,	23266·6	*4190·32	2	,,	,,	23857·8
*4296·47	1	,,	,,	23268·4	*4186·50	1.5	,,	,,	23879·6
*4295·92	3	,,	,,	23271·4	*4185·50	1·5	,,	,,	23885·3
*4293·73	2	,,	,,	23283·3	*4179·37	3	,,	,,	23920·4
*4292·14	2	,,	,,	23291·9	*4176·09	2	,,	,,	23939·1
*4289·87	10nr	,,	,,	23304·2	4175·34	1·5	,,	,,	23943·4
*4284·99	1·5	,,	,,	23330·8	*4174·98	3	,,	,,	23945·5
§*4284·84	1·5	,,	,,	23331·6	†*4172·88	2	,,	,,	23957·6
*4280·53	3	1·17	,,	23355·1	*4171·81	2	,,	,,	23963·7
*4274·91	10nr	,,	,,	23385·8	4170·31	2	,,	,,	23972·3
*4273·04	2	,,	,,	23396·0	4169·94	2	,,	,,	23974·5
4271·18	2	,,	,,	23406·2	4165·67	3	1·14	,,	23999·0
*4270·08	1·5	,,	,,	23412·3	*4163·76	4	,,	,,	24010·1
*4268·90	1·5	,,	,,	23418·7	*4161·55	3	,,	,,	24022·8
*4266·96	1	,,	,,	23429·4	4153·96	4	,,	,,	24066·7
*4263·28	4	,,	,,	23449·6	*4153·20	1·5	,,	,,	24071·1
*4262·53	1·5	,,	,,	23453·7	*4152·89	1·5	,,	,,	24072·9
4262·27	1·5	,,	,,	23455·2	*4146·81	1·5	,,	6·8	24108·1
4261·77	1·5	,,	,,	23457·9	§*4142·31	1·5	,,	,,	24134·3
*4261·49	3	,,	,,	23459·5	*4131·50	2	,,	,,	24197·5
*4255·65	2	,,	,,	23491·7	4128·53	1·5	1·13	,,	24214·9
*4254·49	10nr	,,	,,	23498·1	*4127·77	2	,,	,,	24219·4
4252·37	2	,,	6·6	23509·7	*4127·44	2	,,	,,	24221·3
*4248·84	1·5	,,	,,	23529·2	4127·05	1·5	,,	,,	24223·6
*4248·47	1·5	,,	,,	23531·3	*4126·67	4	,,	,,	24225·8
*4240·82	3	1·16	,,	23573·7	4126·25	1·5	,,	,,	24228·3
*4239·08	3	,,	,,	23583·4	*4123·55	2	,,	,,	24244·1
*4237·83	1·5	,,	,,	23590·4	*4122·34	1·5	,,	,,	24251·3
*4234·64	1·5	,,	,,	23608·2	*†4121·96	2	,,	,,	24253·5
*4233·00	1·5	,,	,,	23617·3	§4121·41	1·5	,,	,,	24256·7
*4232·35	1·5	,,	,,	23620·9	*4120·78	2	,,	,,	24260·4
*4230·61	2	,,	,,	23630·7	*4109·74	1·5	,,	,,	24325·6
†*4224·64	2s	,,	,,	23664·1	4108·54	1·5	,,	,,	24332·7
*4222·89	2	,,	,,	23673·9	4104·90	2	,,	,,	24354·3
4221·71	2	,,	,,	23680·5	*4101·31	1·5	,,	,,	24375·7
4217·75	3	,,	,,	23702·7	*4099·16	1·5	,,	6·9	24388·3
*4216·50	2	,,	,,	23709·8	*4090·43	1·5	1·12	,,	24440·4
*4213·31	1·5	,,	,,	23727·7	†*4085·15	1	,,	,,	24472·0
*4212·77	2	,,	,,	23730·8	4081·88	1	,,	,,	24491·7
*4211·47	2	,,	,,	23738·1	†*4080·35	1·5	,,	,,	24500·8
*4209·90	2	,,	,,	23746·9	4077·81	2	,,	,,	24515·7
*4209·50	3	,,	,,	23749·2	*4077·21	2	,,	,,	24519·7
*4208·50	2	,,	,,	23754·8	4076·20	2	,,	,,	24525·8

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		λ+	$\frac{1}{\lambda}$−				λ+	$\frac{1}{\lambda}$−	
*4075·01	1·5	1·12	6·9	24532·9	*3951·93	1	1·09	7·2	25296·9
4071·13	1	,,	,,	24556·3	3951·26	1·5	,,	,,	25301·2
*4067·94	1	,,	,,	24575·6	*3946·15	1·5	,,	,,	25334·0
4067·05	4	,,	,,	24581·0	3945·68	1	,,	,,	25337·0
*4065·84	3	,,	,,	24588·3	*3941·66	3	,,	,,	25362·8
*4060·77	1·5	,,	,,	24619·0	*3928·79	6	1·08	,,	25445·9
*4058·89	3	,,	,,	24630·4	3926·80	2	,,	,,	25458·8
4056·93	1	,,	,,	24642·3	3923·51	1	,,	,,	25480·2
*4056·17	1·5	,,	,,	24646·9	*3921·20	5	,,	,,	25495·2
*4051·47	1·5	1·11	7·0	24675·4	3920·25	1·5	,,	,,	25501·4
*4050·18	1	,,	,,	24683·3	*3919·31	7	,,	,,	25506·5
*4049·90	1·5	,,	,,	24685·0	*3917·75	1·5	,,	,,	25517·7
4048·94	3	,,	,,	24690·8	*3917·15	1	,,	,,	25521·6
§*4046·89	1	,,	,,	24703·3	*3916·38	4	,,	,,	25526·6
*4044·24	1·5	,,	,,	24719·5	*3915·96	4n	,,	,,	25529·3
*4043·85	1·5	,,	,,	24721·9	*3915·65	1·5	,,	,,	25531·3
*4042·40	1·5	,,	,,	24730·8	*3914·45	1·5	,,	,,	25539·2
*4039·21	3	,,	,,	24750·3	*3908·87	5	,,	7·3	25575·5
*4037·43	1·5	,,	,,	24761·2	*3907·91	2	,,	,,	25581·8
4033·44	1·5	,,	,,	24785·7	3907·40	1	,,	,,	25585·2
*4031·26	1·5	,,	,,	24799·1	3903·30	3	,,	,,	25612·0
4030·82	2	,,	,,	24801·8	3903·02	4	,,	,,	25613·9
*4028·22	1	,,	,,	24817·9	3902·22	2n	,,	,,	25619·1
*4027·24	2	,,	,,	24823·9	3897·83	3n	,,	,,	25648·0
*4026·30	2	,,	,,	24829·7	*3894·20	4	1·07	,,	25671·9
*4025·60	1	,,	,,	24834·0	*3892·07	2n	,,	,,	25686·0
*4025·14	2	,,	,,	24836·9	*3886·94	4	,,	,,	25719·9
*4023·90	1·5	,,	,,	24844·5	*3885·35	4	,,	,,	25730·4
*4022·38	2	,,	,,	24853·9	*3883·78	2	,,	,,	25740·8
4018·36	1	,,	,,	24878·8	†3883·41	4	,,	,,	25743·3
*4016·95	1	,,	,,	24887·5	3881·37	2n	,,	,,	25756·8
4014·85	1	1·10	,,	24900·5	*3879·39	3n	,,	,,	25770·1
4012·63	2	,,	,,	24914·3	*3868·41	1·5	,,	,,	25843·1
4004·11	1	,,	,,	24967·3	3865·73	1·5	,,	,,	25861·0
*4001·58	2	,,	7·1	24983·0	*3862·68	1·5	,,	,,	25881·5
3999·85	1	,,	,,	24993·8	3860·23	1·5	,,	,,	25897·9
*3994·10	1·5	,,	,,	25029·8	3857·74	4	,,	,,	25914·6
*3992·95	3	,,	,,	25037·0	3856·40	2	1·06	,,	25923·6
*3991·81	3	,,	,,	25044·2	*3855·75	3	,,	,,	25928·0
*3991·26	4	,,	,,	25047·6	*3855·41	2	,,	,,	25930·3
*3990·14	2	,,	,,	25054·7	*3854·36	4	,,	,,	25937·3
*3984·48	3	,,	,,	25090·3	*3853·33	1·5	,,	,,	25944·3
*3984·02	5	,,	,,	25093·2	*3852·33	2	,,	,,	25951·0
*3981·37	2	,,	,,	25109·9	3850·13	5n	,,	,,	25965·9
*3979·99	1·5	,,	,,	25118·6	*3849·66	2n	,,	,,	25969·0
*3978·81	2	,,	,,	25126·0	*3849·48	3n	,,	,,	25970·2
*3976·81	6	,,	,,	25138·7	*3849·15	3n	,,	,,	25972·5
3972·85	1	1·09	,,	25163·7	*3841·42	5	,,	,,	26024·7
3971·39	6	,,	,,	25173·0	*3836·22	2	,,	,,	26060·0
*3969·89	5	,,	,,	25182·5	*3834·88	3	,,	,,	26069·1
3969·20	2	,,	,,	25186·9	3833·62	1	,,	,,	26077·7
*3963·82	5	,,	,,	25221·1	*3831·15	3	,,	,,	26094·5
3960·95	1	,,	,,	25239·4	*3830·17	5n	,,	,,	26101·2
*†3953·34	1·5	,,	7·2	25287·9	*3826·55	4n	,,	,,	26125·8
3952·56	1·5	,,	,,	25292·9	*3825·54	2n	,,	,,	26132·9

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*3823·64	2	1·06	7·3	26145 8	*3685·70	2n	1·02	7·6	27124·3
*3822·22	1	,,	,,	26155·5	3683·60	1·5s	,,	7·7	27139·7
*3821·71	1·5	,,	,,	26159 0	*3681·81	1·5s	,,	,,	27152·9
*3821·00	1·5	,,	,,	26163·9	*3681·12	1	,,	,,	27158·1
3820·11	1	,,	,,	26170·0	3680·34	1	,,	,,	27163·7
3819·68	3	,,	,,	26172·9	3679·93	1·5s	,,	,,	27166·7
*3818·61	2	,,	,,	26180·2	*3679·20	1·5s	,,	,,	27172·1
*3817·97	1·5	,,	7·4	26184·5	*3678·00	1·5	,,	,,	27181·0
3816·30	2	1·05	,,	26196·0	*†3668·17	1·5s	,,	,,	27253·9
*3815·53	3	,,	,,	26201·3	3666·78	2	,,	,,	27264 2
3814·74	2	,,	,,	26206·7	3666·30	1s	,,	,,	27267·8
*3812·37	2	,,	,,	26223·0	3666·10	1·5s	,,	,,	27269·2
*3808·06	2	,,	,,	26252·7	*3663·35	3	,,	,,	27289·7
*3806·97	2	,,	,,	26260·2	*3662·97	1·5	,,	,,	27292·6
3806·68	1·5	,,	,,	26262·2	*3656·36	4	1·01	,,	27341·9
*3804·91	4	,,	,,	26274·4	*3654·05	3	,,	,,	27359·2
*3797·85	4	,,	,,	26323·3	*3649·97	1	,,	,,	27389·8
*3797·28	2	,,	,,	26327·2	*3649·12	4	,,	,,	27396·2
*3794·75	2	,,	,,	26344·8	*3648·65	1·5	,,	,,	27399·7
3794 02	2	,,	,,	26349·9	*3646·26	1·5	,,	,,	27417·7
*3793·46	2	,,	,,	26353·8	*3641·95	4	,,	,,	27449·1
*3792·30	2	,,	,,	26361·8	*3641·61	2	,,	,,	27452·7
*3791·51	2	,,	,,	26367·3	*3639·93	5	,,	,,	27465·4
*3790·61	2	,,	,,	26373·6	*3636·72	3	,,	7·8	27489·5
*3790·36	1·5	,,	,,	26375·3	3635·37	1	,,	,,	27499·7
3789·87	1·5	,,	,,	26378·7	*3635·09	1	,,	,,	27501·8
*3789·00	2	,,	,,	26384·8	*3632·92	2	,,	,,	27518·3
3786·38	1	,,	,,	26403·1	*3615·76	1·5	1·00	,,	27648·9
*3769·13	1	1·04	7·5	26523·8	3613·78	1·5	,,	,,	27664·1
*3768·85	2s	,,	,,	26525·8	3612·70	1·5s	,,	,,	27672·3
*3768·37	3s	,,	,,	26529·2	3610·17	1·5	,,	,,	27691·7
3768·23	1·5	,,	,,	26530·2	*3609·62	1·5	,,	,,	27695·9
3767·56	1·5	,,	,,	26534·9	3608·52	1·5	,,	,,	27704·4
*3758·14	2	,,	,,	26601·4	*3605·46	10nr	,,	,,	27727·9
*3757·80	3	,,	,,	26603·8	3603·86	2n	,,	,,	27740·2
*3757·28	1·5	,,	,,	26607·5	†3602·68	1	,,	,,	27749·3
3755·97	1	,,	,,	26616·8	*3601·76	3	,,	,,	27756·4
*3749·13	4	,,	,,	26665·4	*3599·51	1	,,	,,	27773·8
*3748·73	2	,,	,,	26668·2	*3593·57	10nr	,,	7·9	27819·7
*3747·40	1·5	,,	,,	26677·7	3584·45	3b	,,	,,	27890·5
*3744·63	2	,,	,,	26697·4	*3582·74	1·5	,,	,,	27903·8
*3744·01	4	,,	,,	26701·8	*3578·81	10nr	,,	,,	27934·4
*3743·67	4	,,	,,	26704·3	*3575·10	2	0·99	,,	27963·3
*3743·08	2	,,	,,	26708·5	*3574·93	3	,,	,,	27964·7
*3732·15	2	1·03	,,	26786·7	*3574·19	2	,,	,,	27970·5
*3730·91	2	,,	,,	26795·6	3573·79	3	,,	,,	27973·6
*3616·65	1·5n	,,	7·6	26898·4	*3572·90	2	,,	,,	27980·6
*3696·02	1	1·02	,,	27048·5	3569·28	1	,,	,,	28009·0
3689·76	1·5	,,	,,	27094·4	*3566·23	3n	,,	,,	28032·9
3689·41	1·5	,,	,,	27097·0	3565·31	1	,,	,,	28040·2
*†3688·56	1·5	,,	,,	27103·3	*3564·87	1·5	,,	,,	28043·6
*3688·24	1	,,	,,	27105·6	3564·44	1	,,	,,	28047·0
*3687·65	3n	,,	,,	27109·9	3562·57	1	,,	,,	28061·7
3687·41	3n	,,	,,	27111·7	*3562·40	1	,,	,,	28063·1
*3686·95	3n	,,	,,	27115·1	*3559·90	1·5	,,	,,	28082·8

CHROMIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length (Rowland)	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		λ+	$\frac{1}{\lambda}$−				λ+	$\frac{1}{\lambda}$−	
3558·74	3n	0·99	7·9	28091·9	*3481·41	1·5	0·97	8·1	28715·9
*3556·27	1	„	„	28111·4	*3467·86	1·5	„	8·2	28828·0
*3555·88	1	„	„	28114·5	*3465·40	1·5	„	„	28848·5
3554·10	1	„	„	28128·6	*3460·60	1	„	„	28888·5
3552·85	2n	„	„	28138·5	*3455·76	1·5	0·96	„	28929·0
*3550·73	3n	„	8·0	28155·2	*3453·46	1·5	„	„	28948·3
3548·95	1·5n	„	„	28169·3	*3447·90	1	„	„	28995·0
3533·04	1	0·98	„	28296·2	*3447·55	1·5	„	„	28997·9
*3527·22	1	„	„	28342·9	*3447·15	1	„	„	29001·3
*3511·93	1	„	„	28466·4	*3445·71	1·5	„	„	29013·4
3510·66	1·5	„	8·1	28478·6	*3441·56	1·5	„	„	29048·4
*3495·08	1·5	0·97	„	28603·5	*3436·31	1·5	„	„	29092·8
*3488·60	1	„	„	28656·2	*3433·72	1·5	„	„	29114·7
*3483·92	1	„	„	28695·7	*3433·42	1	„	„	29117·3
*3481·66	1·5	„	„	28713·8					

Rowland's Normal Lines: 5798·09, 5754·89, 5731·98, 5709·69, 5688·43, 5662·75, 5634·16, 5487·96, 5447·12, 5409·99, 5379·77, 5353·59, 5324·37, 5296·88, 5266·73, 5233·12, 5202·49, 5173·91, 5146·67, 5126·37, 5090·96, 5083·53, 5050·01, 5020·20, 4994·31, 4981·90, 4934·24, 4890·94, 4859·93, 4824·31, 4805·25, 4754·22, 4727·62, 4703·98, 4690·32, 4668·30, 4643·64, 4629·50, 4611·44, 4590·12, 4571·27, 4563·94, 4508·45, 4494·72, 4447·90, 4407·85, 4376·10, 4352·91, 4318·83, 4293·25, 4267·94, 4254·49, 4222·37, 4199·25, 4185·05, 4157·94, 4121·96, 4103·10, 4083·75, 4055·69, 4029·79, 4003·91, 3977·89, 3954·00, 3926·13, 3916·88, 3897·60, 3875·24, 3843·40, 3821·32, 3794·02, 3770·12, 3754·65, 3732·54, 3695·19, 3667·40, 3640·53, 3612·21, 3583·48, 3564·68, 3540·27, 3518·48, 3491·47, 3464·61, 3455·38.

562 chromium lines coincide with solar lines, and 199 lines have, apparently, no corresponding solar lines. Their intensities are shown in the following Table :—

Intensity	Number of Lines	
	Coincident	Not Coincident
1 to 2	213	129
2 to 4	228	62
4 to 6	74	8
6 to 8	31	0
8 to 10	16	0

POTASSIUM.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bd. lx. 1893.

Flame-spectrum Wave-lengths: Lecoq de Boisbaudran	Flame-spectrum Wave-lengths: Eder and Valenta	Intensity and Character	Reduction to Vacuum: $\lambda+$	Reduction to Vacuum: $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
α 7697	7699	10s	2·08	3·5	12985
α 7663	7666	10s	,,	,,	13041
7248–6825	7040	1b	1·91	3·8	14201
β 5831	5832	5s	1·59	4·7	17142
β 5803	5802	8s	1·58	,,	17231
β 5783	5783	5s	,,	,,	17287
δ 5342	5344	4n	1·46	5·1	18607
5104	5103	3n	1·40	5·4	19591
4948	4950	3n	1·35	5·5	20196
γ 4045	4045·8	10	1·11	7·0	24710
—	3447·2	4	0·96	8·2	29001
—	3217·5	1	0·90	8·8	31071

NOTE.—The continuous spectrum due to potassium extends from 6400 to 4000, being most intense between 5700 and 4700. According to Vogel ('Spectral Analyse') it is due to potassium oxide, but it is present in the spark spectrum of metallic potassium in an atmosphere of hydrogen. The lines 4045·8, 3447·2 and 3217·5 occur in the arc spectrum as the double lines $\begin{Bmatrix} 4047·4 \\ 4044·3 \end{Bmatrix}$ $\begin{Bmatrix} 3447·5 \\ 3446·4 \end{Bmatrix}$ and $\begin{Bmatrix} 3217·8 \\ 3217·3 \end{Bmatrix}$.

SODIUM.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bk. lx 1893.

Flame Spectrum: Wave-length (Eder and Valenta)	Intensity and Character	Reduction to Vacuum: $\lambda+$	Reduction to Vacuum: $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
(5896·16)	10	1·61	4·6	16955·6
(5890·19)	10	1·60	,,	16972·8
3302·5	8	0·93	8·6	30271
2853·0	2	0·81	10·1	35041

The line 3302·5 appears in the arc spectrum as the double line $\begin{Bmatrix} 3303·07 \\ 3302·47 \end{Bmatrix}\left[\begin{Bmatrix} 31266·3 \\ 30271·8 \end{Bmatrix}\right]$, and the line 2853·0 as 2852·91 (35041·8).—Kayser and Runge.

NOTE.—In the Bunsen flame fed with oxygen the following double lines of sodium become visible:—$\begin{Bmatrix} 6160·2 \\ 6154·4 \end{Bmatrix}$ $\begin{Bmatrix} 5687·3 \\ 5681·5 \end{Bmatrix}$ $\begin{Bmatrix} 5155·0 \\ 5152·7 \end{Bmatrix}$ $\begin{Bmatrix} 4983·3 \\ 4982·0 \end{Bmatrix}$.—*Phil. Mag.* xl. 100 (1870).

LITHIUM.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bk. lx. 1893.

Flame-spectrum: Wave-length (Eder and Valenta)	Intensity and Character	Reduction to Vacuum: $\lambda+$	Reduction to Vacuum: $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
(6708·2)	10	1·82	4·0	14903·1
(6103·77)	3	1·66	4·4	16378·9
*4602·4	2	1·26	6·0	21722
*3232·8	4	0·91	8·8	30924

* In the arc spectrum Kayser and Runge obtain for these lines the numbers 4602·37 (21721·8) and 3232·77 (30924·4).

Calcium Chloride and Oxide.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bk. lx. 1893.

Flame-spectrum Wave-lengths Lecoq de Boisbaudran	Flame-spectrum Wave-lengths Eder and Valenta	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
ε6441	†6442	4	1·75	4·2	15519
6348	*6349	2	1·73	4·3	15746
6320	*6322	2	1·72	„	15813
α { 6265	†6265	10	1·70	„	15957
6202	*6202	10	1·69	4·4	16119
6181	*6183	10	1·68	„	16169
δ { 6068	*6069	5	1·65	4·5	16473
6044	*6044	5	„	„	16541
5982	†5983	5	1·63	„	16709
γ5933	*5934	8	1·62	4·6	16847
ζ5817	*5816	3	1·58	4·7	17189
5728	†5727	2	1·56	„	17456
5644	†5644	2	1·54	4·8	17713
β { 5543	†5543·5	8	„	4·9	18034
5517	†5517	8	1·51	„	18121
5427	†5428	2	1·48	5·0	18418
5372	†5374	2	1·47	5·1	18603
	†4550	1	1·25	6·1	21972
	†4515	1	1·24	„	22142
	†4465	1	1·22	6·2	22390
	†4435	1	„	„	22542
	†4396	1	1·21	6·3	22742
	†4362	1	1·20	6·4	22919
	†4324	1	1·19	„	23120
	†4294	1	1·18	6·5	23282
	†4257	1	1·17	„	23484
4226	4227	10s	1·16	6·6	23651
	†4159	1	1·14	6·7	24037
	†4122	1	1·13	6·8	24253
	†4084	1	1·12	6·9	24479
	†4042	1	1·11	7·0	24733
	†4002	1	1·10	7·1	24980
	†3972	1	1·09	„	25169
	†3942	1	„	7·2	25361
	†3909	1	1·08	7·3	25574
	†3880	1	1·07	„	25766
	†3840	1	1·06	„	26034
	†3815	1	1·05	7·4	26205
	†3771	1	1·04	7·5	26511
	†3722	1	1·03	7·6	26860
	†3687	1	1·02	„	27115
	†3644	1	1·01	7·7	27435
	†3608	1	1·00	7·8	27708
	†3569	1	0·99	7·9	28011
	†3531	1	0·98	8·0	28313
	†3494	1	0·97	8·1	28612
	†3463	1	„	8·2	28868
	†3429	1	0·96	8·3	29155

In the arc spectrum Kayser and Runge obtain for the line 4227, due to metallic calcium, the number 4226·91 (23651·3).

* Due to calcium chloride.

† Due to calcium oxide.

Strontium Chloride and Oxide.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bk. lx. 1893.

Flame-spectrum Wave-lengths Lecoq de Boisbaudran	Flame-spectrum Wave-lengths Eder and Valenta	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
ζ 6862	†6863	4	1·86	3·9	14567
ζ 6827	†6828	4	1·85	4·0	14642
6729	*6731	1	1·83	"	14853
γ 6694	†6695	8	1·82	"	14932
γ 6664	†6665	8	1·81	4·1	15000
ε 6627	†6628	6	1·80	"	15083
ε 6597	*6597	6	1·79	"	15154
δ 6464	†6464	6	1·76	4·2	15466
η 6350	*6351	5	1·73	4·3	15741
6276	†6275	1	1·71	"	15932
6233	†6233	1	1·70	"	16039
6191	†6192	1	1·68	4·4	16145
α 6059	†6060	10	1·65	4·5	16497
α 6031	†6032	10	1·64	"	16574
5970	(5968)	2s	1·63	"	16751
5940	†5940	1	1·62	4·6	16830
ι 5911	†5910	3	1·61	"	16916
ι 5890	†5891	3	1·60	"	16970
β 4607	(4608)	10s	1·26	6·0	21695
	†4505	1	1·23	6·1	22191
	†4470	1	"	6·2	22365
	†4430	1	1·21	6·3	22567
	†4391	1	1·20	"	22768
	†4357	1	"	6·4	22945
	†4328	1	1·19	"	23099
	†4292	1	1·18	6·5	23293
	†4259	1	1·17	"	23473
	(4032)	2s	1·11	7·0	24795
	3806	2b	1·05	7·4	26267
	3778	2b	"	"	26462
	3738	2b	1·04	7·5	26745
	3692	3b	1·02	7·6	27078
	3647	3b	1·01	7·7	27412
	3612	1n	1·00	7·8	27678

In the arc spectrum Kayser and Runge obtain for the lines 5968, 4608, and 4032, due to metallic strontium, the numbers 5970·38 (16744·8) 4607·52 (21697·4) and 4032·51 (24791·4).

* Due to strontium chloride.

† Due to strontium oxide.

Note.—Many of the lines of the flame spectra photographed by Eder and Valenta required very long exposures of 20 to 30 hours.

Barium Oxide and Chloride.

Eder and Valenta: 'Sitzber. kais. Akad. Wien,' Bk. lx. 1893.

Flame-spectrum Wave-lengths: Lecoq de Boisbaudran	Flame-spectrum Wave-lengths: Eder and Valenta	Intensity and Character	Reduction to Vacuum: λ +	Reduction to Vacuum: 1/λ −	Oscillation Frequency in Vacuo
6819	†6820	1	1·85	4·0	14659
λ 6499	6497	2	1·77	4·2	15387
6448	†6450	1	1·75	,,	15500
ζ 6297	†6297	2	1·71	4·3	15876
γ { 6239	†6240	4	1·70	,,	16021
γ { 6178	†6177	4	1·68	4·4	16185
γ { 6108	†6109	4	1·66	,,	16365
γ { 6044	†6044	4	1·65	4·5	16541
5995	†5997	1	1·63	,,	16670
β { 5938	†5938	8	1 62	4·6	16836
β { 5881	†5882	8	1·60	,,	16996
μ 5824	†5827	1	1·59	4·7	17157
η { 5768	†5768	4	1·57	,,	17332
η { 5719	†5720	6	1·56	4·8	17478
η { 5661	†5660	8	1·54	,,	17663
5613	†5612	3	1·53	,,	17814
α 5536	5536	10	1·51	4·9	18059
δ 5492	†5493	8	1·50	5·0	18200
5461	†5460	1	1·49	,,	18310
ε 5346	†5346	9	1·46	5·1	18700
	{ †5316	1	1·45	,,	18806
5314	{ *5314	2	,,	,,	18813
	{ †5280	1	1·44	5·2	18934
	†5255	1	,,	,,	19024
5242	*5243	2	1·43	,,	19068
θ 5215	†5215	8	,,	,,	19170
ι 5089	†5089	9	1·39	5·4	19645
5019	†5022	2	1·37	5·5	19907
4974	†4977	2	1·36	,,	20087
	†4954	1	,,	,,	20180
κ 4873	†4873·5	10	1·33	5·6	20513
4794	†4796	3	1·31	5·7	20845
	†4756	1	1·30	5·8	21020
	†4736	1	,,	,,	21109
	† { 4694	3	1·29	5·9	{ 21498
	† { 4681	2	1·28	,,	{ 21351
	† { 4644	1	1·27	,,	{ 21527
	† { 4630	1	,,	6·0	{ 21592
	† { 4589	1	1·26	,,	{ 21785
	† { 4567	1	1·25	,,	{ 21890
	†4554 (?)	1	,,	6·1	21953
	†4535	1	1·24	,,	22045
	†4488	1	1·23	6·2	22275
	†4443	1	1·22	,,	22501
	†4398	1	1·21	6·3	22731
	†4353	1	1·19	6·4	22966
	†4309	1	1·18	6·5	23201
	†4270	1	1·17	,,	23413
	†4235	1	1·16	6·6	23606
	†4200	1	1·15	6·7	23803
	†4165	1	1·14	,,	24003
	†4128	1	1·13	6·8	24218

Barium Oxide and Chloride—*continued.*

Flame-spectrum Wave-lengths: Lecoq de Boisbaudran	Flame-spectrum Wave-lengths: Eder and Valenta	Intensity and Character	Reduction to Vacuum: λ+	Reduction to Vacuum: 1/λ−	Oscillation Frequency in Vacuo
	†4088	1	1·12	6·9	24455
	†4047	1	1·11	7·0	24703
	†4009	1	1·10	„	24937
	†3984	1	„	7·1	25093
	†3951	1	1·09	7·2	25303
	†3918	1	1·08	„	25516

In the arc spectrum Kayser and Runge have obtained for the lines 6497, 5536, and 4554, due to metallic barium, the numbers 6498·93 (15382·9), 5535·69 (18059·7), and 4554·21 (21951·6).

* Due to barium chloride.
† Due to barium oxide.

Boron (Spark Spectrum).

Eder and Valenta: 'Denkschr. math. Wissensch. kais. Akad. Wien,' Bd. lx. 1893.
Ciamician: 'Sitzber. kais. Akad. Wissensch. Wien,' Bd. lxxxix. 1890.

Wave-lengths: Ciamician	Wave-lengths: Eder and Valenta	Intensity and Character	Reduction to Vacuum: λ+	Reduction to Vacuum: 1/λ−	Oscillation Frequency in Vacuo
5103		1	1·40	5·4	19590·9
4981		1	1·36	5·5	20070·8
4966		1	„	„	20131·4
4964		1	„	„	20139·5
	{ 3957·9	2	1·09	7·1	{ 25258·8
	{ 3941·7	2	„	7·2	{ 25362·6
	{ 3829·3	1	1·06	7·3	{ 26107·3
	{ 3824·5	1	„	„	{ 26140·0
	*3451·3	6	0·96	8·2	28968·4
	3246·9	1	0·91	8·8	30789·8
	{ 2689·0	1	0·77	10·8	{ 37177·8
	{ 2686·2	1	„	„	{ 37216·5
	*2497·7	10	0·73	11·7	40025·1
	*2496·8	10	„	„	40039·6
	2388·5	1	0·71	12·4	41854·9
	{ 2267·0	2	0·68	13·3	{ 44097·9
	{ 2266·4	2	„	„	{ 44109·5
	{ 2088·8	2	0·65	14·9	{ 47859·5
	{ 2088·4	2	„	„	{ 47868·6
	{ 2066·2	2	0·64	15·3	{ 48382·7
	{ 2064·6	2	„	„	{ 48416·2

* Observed also by Hartley. See 'Index,' p. 18.

Eder and Valenta confirm the measurements of the flame spectrum of boron trioxide given by Lecoq de Boisbaudran ('Index,' p. 165), giving the numbers 6398, 6208, 6030, $\begin{cases}5795\\5594\end{cases}$, $\begin{cases}5478\\5440\end{cases}$, $\begin{cases}5212\\5172\end{cases}$, 4920, 4709, 4529. By the use of the oxyhydrogen flame they obtained also 4334, 4191, $\begin{cases}4094\\4020\end{cases}$, 3894, and 3768.

Tin (Arc Spectrum).

Kayser and Runge: 'Abhandl. königl. Akad. Wissensch. zu Berlin,' 1893.

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	$\frac{1}{\lambda}$−	
5631·91	0·03	8	5630·0 Thalén		1·54	4·8	17751·2
4524·92	0·03	8	4524·0 ,,		1·24	6·1	22093·7
3801·16	0·05	6r	3800·3 H. & A.		1·05	7·4	26300·4
†3655·88	0·03	4	3655·5 ,,		1·01	7·7	27345·5
3330·71	0·05	6r	3330·0 ,,	3326·0 L.&D.	0·93	8·5	30015·1
‡3262·44	0·03	8r	3261·6 ,,	3260·0 ,,	0·92	8·7	30643·2
3218·78	0·03	4	3218·0 ,,		0·90	8·8	31058·9
3175·12	0·03	8r	3174·3 ,,	3175·0 ,,	0·89	9·0	31485·9
3141·92	0·03	4	3140·6 ,,	3141·7 ,,	0·88	9·1	31818·6
3034·21	0·03	10r	3033·1 ,,	3033·0 ,,	0·86	9·4	32948·1
§3032·88	0·03	4r			,,	,,	32962·6
3009·24	0·05	10r	3007·9 ,,	3008·5 ,,	0·85	9·5	33221·5
2922·48	0·15	2bʳ			0·83	9·8	34207·7
¶2913·67	0·03	6r	2911·9 ,,	2913·1 ,,	,,	9·9	34311·1
2863·41	0·03	10r	2862·1 ,,	2862·8 ,,	0·81	10·1	34913·3
2850·72	0·03	6r	2849·3 ,,		,,	,,	35068·8
2840·06	0·03	10r	2838·9 ,,	2839·5 ,,	,,	10·2	35200·3
2813·66	0·05	4r	2812·5 ,,	2813·5 ,,	0·80	10·3	35530·6
2812·70	0·05	4	2811·5 ,,	2812·5 ,,	,,	,,	35542·7
2788·09	0·10	6br	2787·3 ,,	2787·5 ,,	,,	10·4	35856·4
**2785·14	0·03	4r	2784·0 ,,	2784·7 ,,	,,	,,	35894·4
††2779·92	0·03	6r	2778·8 ,,	2779·5 ,,	0·79	,,	35961·9
2706·61	0·03	10r	2705·8 ,,		0·78	10·7	36935·9
2661·35	0·03	6r	2660·2 ,,	2660·7 ,,	0·77	10·9	37564·0
2637·05	0·03	4n		2636·5 ,,	0·76	11·0	37910·2
2594·49	0·03	6r	2593·6 ,,	2593·5 ,,	0·75	11·2	38532·0
2571·67	0·03	8r	2570·5 ,,	2571·0 ,,	,,	11·3	38873·9
‡‡2558·12	0·20	6bʳ	2557·7 ,,	2557·5 ,,	0·74	11·4	39079·8
2546·63	0·03	8r	2545·6 ,,	2546·1 ,,	,,	11·5	39256·1
2531·35	0·10	6bʳ	2530·8 ,,	2530·7 ,,	,,	,,	39493·1
2526·13	0·10	1bʳ			,,	11·6	39574·6
§§2524·05	0·05	4r	2523·4 ,,	2523·5 ,,	,,	,,	39607·3
2499·30	0·20	1bʳ	2499·3 ,,		0·73	11·7	39999·5
2495·80	0·03	8r	2495·0 ,,	2493·5 ,,	,,	,,	40055·6
2491·91	0·20	2bʳ	2488·0 ,,	2493·5 ,,	,,	11·8	40118·1
2483·50	0·03	8r	2482·9 ,,	2483·1 ,,	,,	,,	40254·0
2455·30	0·03	4	2455·5 ,,		0·72	12·0	40716·2
2433·53	0·03	2	2433·3 ,,		,,	12·1	41080·5
2429·58	0·03	10r	2429·3 ,,	2439·5 ,,	,,	,,	41147·3
2421·78	0·03	10r	2421·8 ,,	2421·5 ,,	0·71	12·2	41279·7
2408·27	0·03	6r	2408·0 ,,	2407·9 ,,	,,	12·3	41511·3
2386·96	0·50	2n			,,	12·4	41881·5
2380·82	0·05	4r	2381·1 ,,		,,	12·5	41989·8
2364·89	0·20	2n		2364·7 ,,	0·70	12·6	42272·7
2358·05	0·05	4		2357·7 ,,	,,	,,	42395·3
2354·94	0·03	10r	2355·0 ,,	2354·5 ,,	,,	,,	42451·3
2334·89	0·03	8r	2335·3 ,,	2334·3 ,,	,,	12·8	42815·8
2317·32	0·03	10r	2317·9 ,,	2317·0 ,,	0·69	12·9	43140·4
2286·79	0·03	6r	2288·1 ,,	2286·9 ,,	,,	13·2	43716·2
2282·40	0·03	4		2282·5 ,,	,,	,,	43800·3
2269·03	0·05	10r	2270·0 ,,	2275·4 ? ,,	0·68	13·3	44058·4
2267·30	0·05	6r	2268·6 ,,		,,	,,	44092·0

TIN (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
2251·29	0·10	6r	2251·0 L. & D.	0·68	13·4	44405·6
2246·15	0·10	10r	2247·0 H. & A. 2245·8 ,,	,,	13·5	44507·1
2231·80	0·10	6r	2233·2 ,, 2231·3 ,,	,,	13·6	44793·3
2209·78	0·10	10r	2210·1 ,, 2210·7 ,,	0·67	13·8	45239·6
2199·46	0·10	10r	2199·2 ,, 2198·7 ,,	,,	13·9	45451·8
2194·63	0·10	8r	2195·0 ,, 2194·1 ,,	,,	,,	45551·9
2171·5	0·20	6r		0·66	14·1	46037·0
2151·2	0·20	6r?	2151·2	,,	14·3	46471·4
2148·7	0·20	8r?		,,	,,	46525·5
2141·1	0·20	10r		,,	14·4	46690·6
2121·5	0·20	6r	2119·2 ?	0·65	14·6	47121·9
2113·9	0·30	6r	2113·6	,,	14·7	47291·2
2100·9	0·50	6r		,,	14·8	47583·8
2096·4	0·30	10r		,,	,,	47686·0
2091·7	0·50	6r?		,,	14·9	47793·1
2080·2	0·50	6	2079·3 ,,	,,	15·3	48057·0
2073·0	0·50	8r		0·64	,,	48224·0
2068·7	0·50	6	2066·1 ? ,,	,,	,,	48324·2
2063·8	0·50	6		,,	,,	48439·0
2058·3	0·50	6		,,	,,	48568·5
2053·8	0·50	6		,,	,,	48674·9

* See Iron. † See Copper. ‡ See Lead. § See Arsenic.
¶ See Gold. ** See Barium. †† See Magnesium.
‡‡ See Zinc. §§ See Silicon.

LEAD (ARC SPECTRUM).

Kayser and Runge: 'Abhandl. königl. Akad. Wissench. zu Berlin,' 1893.

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
6002·08	0·10	2b^{v}	6001·5 Thalén	1·63	4·5	16656·4
5201·65	0·05	4b^{v}	5201·0 ,,	1·42	5·3	19219·4
5005·62	0·05	6b^{v}	[5005·634 Rowland]	1·37	5·5	19972·1
4340·65	0·05	2		1·19	6·4	23031·6
4168·21	0·03	4r	4167·5 Thalén	1·14	6·7	23984·4
4062·30	0·03	4r	4061·5 H. & A.	1·12	6·9	24609·7
4057·97	0·03	10r	4057·6 ,,	,,	,,	24636·0
4019 77	0·05	4r	4020·5 ,, 4019·0 L.&D.	1·11	7·0	24870·0
3740·10	0·03	8r	3738·9 ,, 3739·3 ,,	1·04	7·5	26729·7
3683·60	0·03	10r	[3683·622 Rowland]	1·02	7·7	27139·7
3671·65	0·03	4r	3671·0 H. & A. 3670·7 ,,	,,	,,	27228·0
3639·71	0·03	10r	[3639·728 Rowland]	1·01	,,	27467·0
3572·88	0·03	8r	3572·6 H. & A. 3572·0 ,,	0·99	7·9	27980·7

LEAD (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ +	$\frac{1}{\lambda}$ −	
*†3262·47	0·05	6		3260·0 L.&D.	0·92	8·7	30643·2
3240·31	0·05	6		3238·6 ,,	0·91	8·8	30852·4
3220·68	0·05	6	3219·9 H. & A.	3219·6 ,,	0·90	,,	31040·5
3150·9	2·00	4n			0·89	9·0	31728·0
3119·09	0·10	2		3118·5 ,,	0·88	9·1	32051·5
2980·29	0·10	2		2981·0 ,,	0·84	9·6	33544·2
2926·84	0·10	2b^v			0·83	9·8	34156·7
2873·40	0·03	6r	2872·2 ,,	2872·0 ,,	0·82	10·0	34792·0
2833·17	0·03	10r	2832·2 ,,	2832·9 ,,	0·81	10·2	35286·0
2823·28	0·03	6r	2822·1 ,,	2822·5 ,,	0·80	10·3	35409·5
2802·09	0·03	8r	2801·4 ,,	2801·1 ,,	,,	,,	35677·4
‖§2712·62	0·10	2b^v			0·78	10·7	36854·0
2697·72	0·10	6rn	2697·2 ,,	2697·0 ,,	0·77	10·8	37057·5
2663·26	0·03	6r	2662·5 ,,	2662·7 ,,	,,	10·9	37537·1
2657·16	0·03	2			,,	,,	37623·3
2650·77	1·00	8n	2650·0 ,,	2650·5 ,,	0·76	11·0	37713·9
¶2628·36	0·03	2r	2627·4 ,,	2627·8 ,,	,,	11·1	38035·4
2614·26	0·03	8r	2613·4 ,,	2613·7 ,,	,,	,,	38240·6
2613·74	0·03	4r			,,	,,	38248·3
2577·35	0·05	6r	2576·4 ,,	2575·7 ,,	0·75	11·3	38788·2
2476·48	0·03	6r	2475·7 ,,	2476·5 ,,	0·73	11·9	40368·0
2446·28	0·03	6r	2445·7 ,,	2446·1 ,,	0·72	12·0	40866·3
**2443·92	0·03	6r	2443·6 ,,	2443·7 ,,	,,	,,	40905·9
2428·71	0·05	6r	2427·8 ,,	2428·5 ,,	,,	12·1	41162·0
2411·80	0·03	6r	2411·2 ,,	2411·5 ,,	0·71	12·3	41450·5
2402·04	0·03	6r	2402·1 ,,	2401·8 ,,	,,	,,	41619·0
††2399·69	0·03	4r		2399·4 ,,	,,	,,	41659·7
2393·89	0·03	8r	2393·7 ,,	2393·7 ,,	,,	12·4	41760·6
2388·89	0·05	4r	2389·0 ,,	2388·8 ,,	,,	,,	41848·0
2332·54	0·03	6r	2333·3 ,,	2332·0 ,,	0·70	12·8	42858·9
2257·53	0·15	1			0·68	13·4	44282·8
2254·02	0·05	4r			,,	,,	44351·8
2247·00	0·05	10r	2247·9 ,,		,,	13·5	44490·3
2237·52	0·05	8r	2238·2 ,,		,,	13·6	44678·7
§§2203·57	0·05	4	2204·3 ,,		0·67	13·9	45367·0
2187·99	0·10	2			,,	14·0	45690·0
***2175·88	0·10	6r			0·66	14·1	45944·3
2170·07	0·10	10r	2170·0 ,,		,,	14·2	46067·3
2115·1	0·10	8r			0·65	14·7	47264·4
2112·0	0·10	6			,,	,,	47333·8
2088·5	0·10	8r			,,	14·9	47866·3

* See Tin. † See Barium. ‖ See Zinc. § See Cadmium.
¶ See Iron. ** See Thallium. †† See Mercury
§§ Possibly not due to Lead. *** See Antimony.

Arsenic (Arc Spectrum).

Kayser and Runge: 'Abhandl. königl. Akad. Wissensch. zu Berlin,' 1893.

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3119·69	0·03	4	3119·2 H. & A.	0·88	9·1	32045·4
3075·44	0·03	2	3075·0 ,,	0·87	9·3	32506·4
*3032·96	0·03	4	3032·2 ,,	0·86	9·4	32961·7
2991·11	0·03	2	2990·2 ,,	0·85	9·6	33422·8
2898·83	0·03	4r	2898·2 ,,	0·82	9·9	34486·8
2860·54	0·03	6r	2859·7 ,,	0·81	10·1	34948·3
2780·30	0·03	8r	2779·5 ,,	0·79	10·4	35956·9
2745·09	0·03	6r	2744·1 ,,	,,	10·6	36418·1
2492·98	0·03	1	2491·9 ,,	0·73	11·8	40100·8
2456·61	0·03	4r	2456·2 ,,	0·72	12·0	40694·5
2437·30	0·03	1	2436·9 ,,	,,	12·1	41016·9
2381·28	0·03	4r	2381·0 ,,	0·71	12·5	41981·7
2370·85	0·03	4r	2370·8 ,,	0·70	,,	42166·5
2369·75	0·03	4r	2369·7 ,,	,,	,,	42186·0
2363·12	0·03	2	2362·8 ,,	,,	12·6	42304·3
2349·92	0·03	10r	2350·1 ,,	,,	12·7	42541·9
†2288·19	0·03	10r	2288·9 ,,	0·69	13·2	43689·5
2271·46	0·05	4	2272·3 ,,	0·68	13·3	44011·2
2266·79	0·05	4	2267·5 ,,	,,	,,	44101·9
2228·77	0·05	2	2230·0 ,,	0·67	13·6	44854·2
2206·08	0·10	2	2207·0 ,,	,,	13·8	45315·5
2205·28	0·10	2		,,	,,	45331·9
2183·07	0·10	1	2182·5 ,,	,,	14·0	45793·0
2176·37	0·10	1	2176·8 ,,	0·66	14·1	45934·0
2165·64	0·10	4	2165·4 ,,	,,	14·2	46161·5
2144·21	0·10	4	2144·5 ,,	,,	14·4	46622·8
2133·92	0·10	2	2135·2 ,,	,,	14·5	46847·6
2113·14	0·10	2	2112·2 ,,	0·65	14·7	47308·2
2089·71	0·10			,,	14·9	47838·6
2089·02	0·10			,,	,,	47854·4
2069·96	0·10			0·64	15·3	48294·8
2067·26	0·10			,,	,,	48357·9
2065·52	0·10			,,	,,	48398·7
2010·23	0·20			0·63	15·7	49729·8
†2009·31	0·20			,,	,,	49752·6

* See Tin.

† The spectrum of arsenic shows no lines in the visible spectrum, but between 3000–2000, the lines of arsenic, and in particular 2288·19 and 2009·31, constantly appear as impurities in other metals and in the carbon poles. The lines 2288·19 and 2009·31, given as copper lines (Appendix E, pp. 11, 12), appear to be due to arsenic. The *spark*-spectrum of arsenic, on the other hand, shows some fifty lines in the visible portion.

The difference between the arc-spectrum and the spark-spectrum is strikingly shown also in the case of tin, lead, antimony, and bismuth.

Antimony (Arc Spectrum).

Kayser and Runge: 'Abhandl. königl. Akad. Wissensch. zu Berlin,' 1893.

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					$\lambda +$	$\frac{1}{\lambda} -$	
*5730·52	0·20	2b^{v}			1·56	4·7	17445·7
*5707·63	0·20	1n			,,	4·8	17515·6
*5660·98	0·20	1n			1·54	,,	17660·0
*5632·22	0·20	4b^{v}			,,	,,	17750·2
*5568·25	0·20	1n	5567·0 Thalén		1·52	4·9	17954·1
*5556·39	0·20	2n			,,	,,	17992·4
*5490·60	0·30	2			1·50	5·0	18207·9
4033·70	0·03	4		4032·0 L.& D.	1·11	7·0	24784·1
3722·92	0·03	4	3722·4 H.& A.		1·03	7·6	26853·0
3637·94	0·03	4	3637·5 ,,	3637·0 ,,	1·01	7·8	27480·3
3383·24	0·03	2	3382·0 ,,		0·95	8·4	29549·1
3267·60	0·03	6r	3267·6 ,,	3265·0 ,,	0·92	8·7	30594·8
3232·61	0·03	6r	3231·6 ,,	3230·8 ,,	0·91	8·8	30926·0
3029·91	0·03	6r	3029·0 ,,	3028·0 ,,	0·86	9·4	32994·9
2878·01	0·03	10r	2877·1 ,,	2876·5 ,,	0·82	10·0	34736·2
2851·20	0·03	2	2849·9 ? ,,		0·81	10·1	35062·8
2770·04	0·03	8r	2768·9 ,,		0·79	10·5	36090·1
2727·32	0·03	4	2726·1 ,,		0·78	10·6	36655·4
2719·00	0·03	4r	2717·9 ,,		,,	10·7	36767·5
2692·35	0·03	4r	2691·3 ,,		0·77	10·8	37131·5
2682·86	0·03	4r	2681·7 ,,		,,	,,	37262·9
†2670·73	0·03	6r	2668·9 ,,		,,	10·9	37432·0
2652·70	0·03	4	2651·7 ,,		0·76	11·0	37686·4
2614·74	0·03	2	2613·7 ,,		,,	11·1	38233·6
2612·40	0·03	4r	2611·3 ,,		,,	,,	38267·9
2598·16	0·03	10r	2597·2 ,,	2597·5	0·75	11·2	38477·6
2574·14	0·03	2	2572·7 ,,		,,	11·3	38836·6
2554·72	0·03	2	2553·3 ,,		0·74	11·4	39131·8
‡2528·60	0·03	10r	2527·6 ,,	2528·0 ,,	,,	11·6	39536·0
2514·64	0·03	1	2514·5 ,,		0·73	,,	39755·5
§2510·60	0·03	1	2509·5 ,,		,,	11·7	39819·4
2481·81	0·03	1	2480·4 ,,		,,	11·8	40281·4
2480·50	0·03	2	2479·4 ,,		,,	,,	40302·6
2474·63	0·03	2	2473·4 ,,		,,	11·9	40398·3
2445·59	0·03	4r	2444·8 ,,		0·72	12·0	40877·6
2426·44	0·03	4r	2425·7 ,,	2426·0 ,,	,,	12·2	41200·4
2422·21	0·03	4	2421·5 ,,		,,	,,	41272·4
2395·31	0·03	2	2395·3 ,,		0·71	12·4	41735·8
2383·71	0·03	4	2383·2 ,,	2383·3 ,,	,,	,,	41939·0
‖2373·78	0·05	6	2374·3 ,,		0·70	12·5	42114·4
2360·60	0·03	2	2361·3 ,,		,,	12·6	42349·5
2352·31	0·03	2	2353·0 ,,		,,	12·7	42498·7
2329·19	0·03	2	2329·7 ,,		,,	12·8	42920·6
2311·60	0·03	10r	2311·8 ,,	2313·0 ,,	0·69	13·0	43247·1
2306·56	0·03	8r	2306·8 ,,	2310·0 ,,	,,	,,	43341·6
2293·54	0·10	4	2294·0 ,,		,,	13·1	43587·6
2289·09	0·10	4	2288·8 ,,		,,	,,	43672·4
2262·55	0·20	6	2263·5 ,,		0·68	13·4	44184·5
2225·06	0·10	4	2226·3 ,,		0·67	13·7	44928·9
2222·10	0·10	4	2223·5 ,,		,,	,,	44988·8
2220·85	0·10	2	2221·5 ,,		,,	,,	45014·1
2212·54	0·10	1	2211·3 ,,		,,	13·8	45183·1
2208·65	0·10	4	2209·0 ,,		,,	,,	45262·7

ANTIMONY (ARC SPECTRUM)—*continued.*

Wave-length	Limit of Error	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
				λ+	1/λ	
2207·86	0·10	2		0·67	13·8	45278·9
2203·83	0·10	2	2203·8 H. & A.	,,	,,	45361·7
2203·13	0·10	2	2202·2 ,,	,,	13·9	45376·1
2201·46	0·10	4	2200·3 ,,	,,	,,	45410·5
¶2179·33	0·10	6r	2179·0 ,,	0·66	14·1	45871·6
**2175·99	0·10	10r	2175·8 ,,	,,	,,	45942·0
2159·32	0·20	4	2159·4 ,,	,,	14·3	46296·6
2159·02	0·20	4		,,	,,	46303·0
2145·10	0·20	4	2144·4 ,,	,,	14·4	46603·5
2141·76	0·20	4	2142·0 ,,	,,	,,	46676·2
2139·89	0·20	4	2139·3 ,,	,,	,,	46717·0
2137·21	0·20	4	2135·7 ,,	,,	14·5	46775·5
2127·55	0·20	4	2126·1 ,,	0·65	,,	46987·9
2117·28	0·30	4	2118·0 ,,	,,	14·6	47215·8
2098·47	0·30	6	2096·4 ,,	,,	14·8	47639·0
2079·55	0·30	4	2075·3 ,,	,,	15·3	48072·0
††2068·54	0·30	10r	2064·8 ,,	0·64	,,	48328·0

* Possibly not due to Antimony. † See Zinc.
‡ See Silicon. § See Gold. ‖ See Iron.
¶ See Copper. ** See Lead. †† See Tin.

BISMUTH (ARC SPECTRUM).

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström)		Reduction to Vacuum		Oscillation Frequency in Vacuo
					λ+	1/λ −	
5742·74	0·20	4b^{v}			1·57	4·7	17408·6
5552·44	0·20	8b^{v}	5553·0 Thalén		1·51	4·9	18005·2
5298·52	0·20	2b^{v}			1·45	5·2	18868·0
4733·91	0·20	4b^{v}			1·30	5·8	21118·4
4722·72	0·03	10r	4722·0 ,,		1·29	,,	21168·4
4692·45	0·03	1	4691·5 ,,		1·28	5·9	21304·9
4615·71	0·03	1			1·26	6·0	21659·1
4615·27	0·03	1			,,	,,	21661·2
4493·16	0·03	2			1·23	6·2	22249·8
4492·79	0·03	2			,,	,,	22251·7
4308·70	0·03	4			1·18	6·5	23202·4
*4308·34	0·03	4			,,	,,	23204·3
4254·33	0·03	1n			1·17	,,	23499·0
4122·01	0·03	6	4119·0? ,,	L. & D.	1·13	6·8	24253·2
4121·69	0·03	6			,,	,,	24255·1
3888·34	0·03	1			1·07	7·3	25710·6
3888·05	0·03	1			,,	,,	25712·5
3596·26	0·03	4r	3595·7 ,,	3595·3	1·00	7·8	27798·9
3511·00	0·03	4r	3510·5 ,,	3510·4	0·98	8·0	28473·9
3405·39	0·05	2r			0·95	8·3	29356·9
3397·31	0·03	4r	3396·7 ,,	3396·2	,,	,,	29426·7
3076·73	0·03	2	3075·7 ,,		0·87	9·3	32492·7
3067·81	0·03	10r	3067·1 ,,	3066·0	,,	,,	32587·2

BISMUTH (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Limit of Error	Intensity and Character	Previous Measurements (Ångström) *	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
†3034·99	0·05	4b^r	3034·5 Thalén	0·86	9·4	32939·6
‖3024·75	0·03	8r	3023·8 „ 3023·5	„	9·5	33051·1
2993·46	0·03	8r	2992·2 „	0·85	9·6	33396·6
2989·15	0·03	8r	2988·1 „	„	„	33444·7
2944·38	0·10	1n	2942·4 „	0·84	9·8	33953·2
§2938·41	0·03	10r	2937·5 „ 2937·4	0·83	„	34022·2
2898·08	0·03	10r	2897·2 „ 2897·0	0·82	9·9	34495·7
2892·98	0·10	1n		„	10·0	34556·4
2883·88	0·10	1n		„	„	34665·5
2863·86	0·05	4	2862·5 „ 2862·0	0·81	10·1	34907·8
2809·74	0·03	8r	2808·4 H.&A. 2810·0 L. & D.	0·80	10·3	35580·2
2798·75	0·03	4	2798·0 „ 2799·0 „	„	10·4	35719·8
2780·57	0·03	8r	2779·3 „ 2780·0 „	0·79	„	35953·4
2730·61	0·03	6r	2729·3 „ 2730·0 „	0·78	10·6	36611·2
2696·84	0·03	6r	2695·6 „	0·77	10·8	37069·6
2627·99	0·03	8r	2627·0 „	0·76	11·1	38040·8
2600·73	0·03	1		0·75	11·2	38439·5
2594·14	0·05	1		„	„	38537·2
2582·17	0·03	2	2581·5 „	„	11·3	38715·8
2532·65	0·50	4n	2531·9 „	0·74	11·5	39472·5
2524·58	0·03	8r	2523·5 „ 2524·0 „	„	11·6	39599·0
2515·72	0·03	6r	2514·3 „ 2515·4 „	0·73	„	39738·4
2499·58	0·03	2	2499·1 „	„	11·7	39995·0
2489·5	2·00	6b	2489·1 „	„	11 8	40157·2
2448·15	0·03	4	2447·2 „ 2448·0 „	0·72	12·0	40835·2
2433·5	2·00	4b	2435·5 „	„	12·1	41080·9
2430·51	0·05	2n	2429·3 ? 2431·0 „	„	„	41131·5
2409·7	2·00	2b		0·71	12·3	41486·7
2400·98	0·03	8r	2400·7 „ 2400·8 „	„	„	41637·4
2369·22	0·03	1	2368·0 „	0·70	12·5	42195·5
2360·0	1·00	1b		„	12·6	42360·4
2354·57	0·05	2n		„	12·7	42457·9
2346·0	0·50	2n	2347·0 „	„	„	42613·3
2333·87	0·05	2	2331·8 „	„	12·8	42834·5
2328·27	0·05	2	2327·0 „	„	„	42937·6
2309·4	1·00	4b^r		0·69	13·0	43288·0
2281·39	0·10	2b	2281·0 „	„	13·2	43819·7
2276·64	0·03	8n	2276·9 „ 2277·0 „	0·68	„	43911·2
2230·70	0·05	10r	2231·4 „	„	13·6	44815·4
2228·31	0·05	8r	2229·1 „	0·67	„	44863·5
2224·27	0·05	2		„	13·7	44944·9
2214·21	0·05	4	2214·8 „	„	13·8	45149·0
2203·2	1·00	6n	2203·3 „	„	13·9	45375·1
2189 70	0·05	8r	2190·4 „	„	14·0	45654·4
2176·70	0·20	6r	2176 6 „	0·66	14·1	45927·0
2164·16	0·20	4r		„	14·2	46193·1
2157·03	0·05	10r		„	14·3	46345·7
2153·60	0·20	4r		„	„	46419·6
2152·98	0·05	8r		„	„	46433·0
2134·38	0·10	10r		„	14·5	46837·5
2133·72	0·10	8r	2133·8 „	„	„	46852·0
2110·35	0·10	10r	2109·8 „	0·65	14·7	47370·8
2061·77	0·10	10r	2058·2 „	0·64	15·3	48486·7

* See Strontium. † See Potassium. ‖ See Gold. § See Silver.

Argon (Vacuum Tube).

Crookes, Royal Society, Special Meeting, January 31, 1895.

Positive Spark (Red Spectrum)		Negative Condensed Spark (Blue Spectrum)		Reduction to Vacuum		Oscillation Frequency in Vacuo
Wave-length	Intensity	Wave-length	Intensity	$\lambda +$	$\frac{1}{\lambda} -$	
7056·4	10			1·91	3·8	14167·7
6965·6	9			1·89	3·9	14352·3
6407	9			1·74	4·2	15604
6038	8	6038·4	8	1·64	4·5	16555·9
5651	9			1·54	4·8	17691
5610	9			1·53	4·9	17820
5557·0	10			1·52	,,	17990·4
5496·5	8			1·50	5·0	18188·4
5185·8	10			1·42	5·3	19278·1
5165	9			1·41	,,	19356
		5140	10	,,	,,	19450
		5065	10	1·39	5·4	19738
		5007	9	1·37	5·5	19966
		4965·5	9	1·36	,,	20133·5
		4938	10	1·35	5·6	20245
		4879	10	1·34	,,	20490·0
4701·2	8			1·29	5 9	21265·3
		4608·0	8	1·26	6·0	21695·4
4509·5	9	4509·5	8	1·24	6·1	22169·3
		4426·5	10	1·21	6·3	22584·9
		4422·5	10	,,	,,	22605·3
		4399·5	10	,,	,,	22723·6
		4376·5	9	1·20	,,	22843·0
		4369·0	9	,,	,,	22882·2
		4348·5	10	,,	6·4	22990·0
4333·5	9	4333·5	9	1·19	,,	23069·6
4300·5	9		9	1·18	6·5	23246·6
		4299·0	9	,,	,,	23254·7
4272·0	8			1·17	,,	23401·7
4259·5	9	4259·5	8	,,	,,	23470·4
4201·0	10	4201·0	10	1·15	6 6	23797·3
4198·0	9	4198·0	9	,,	6·7	23814·2
4191·5	9	4191·5	9	,,	,,	23851·1
4183·0	8	4183·0	8	1·14	,,	23899·6
		4164·5	8	,,	,,	24005·8
4159·5	10	4159·5	10	,,	,,	24034·6
		4105·0	8	1·13	6·8	24353·7
		4072·5	8	1·12	6·9	24548·0
4044·0	9	4044·0	8	1·11	7·0	24721·0
		4013·0	8	1·10	,,	24912·0
3948·5	10	3948·5	9	1·09	7·2	25318·8
		3928·5	8	1·08	,,	25447·8
3904·5	8			,,	7·3	25604·1
		3868·5	8	1·07	,,	25842·7
		3851·5	10	1·06	,,	25956·6
		3780·8	9	1·05	7·4	26442·0
		3766·0	8	1·04	7·5	26545·9
		3729·8	10	1·03	,,	26803·5
		3587·0	10	1·00	7·9	27870·5
		3580·3	9	,,	,,	27922·8
		3575·0	9	0·99	,,	27964·1
		3490·0	8	0·97	8·1	28645·1

Lines of intensity less than 8 omitted. All lines sharp.

ARGON.

Spark spectrum at atmospheric pressure (Schuster).

Wave-length	Intensity and character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$	
4879·1	Strong	1·34	5·6	20490·0
4847·1	Not quite so strong	1·33	5·7	20625·2
4805·2	Strong	1·32	"	20805·1
4765·0	Fairly strong, characteristic triplet	1·30	5·8	20980·6
4735·3		"	"	21112·2
4725·6		1·29	"	21155·5

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LONDON

APPENDIX G.

NOTE.—Unless otherwise stated, all wave-lengths are upon Rowland's scale in air of about 20° C. and 760 mm. pressure. All oscillation frequencies are in vacuo.

TABLE OF STANDARD WAVE-LENGTHS (in air at 20° C. and 760 mm.).

[See Explanatory Note, p. 22.]

Rowland: 'Astronomy' and 'Astro-Physics,' 1893, xii. 321.

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	$\lambda +$	$\frac{1}{\lambda} -$	
? .		4			1		7714·686	2·09	3·5	12958·8
? .		7			1		7699·374	2·08	,,	12984·6
$[A_{11}]$ O .		7			3		7671·994	,,	,,	13030·9
O .		7			3		7670·993	,,	,,	13032·6
$[A_{10}]$ O .		8			3		7666·239	,,	,,	13040·7
O .		8			3		7665·265	,,	,,	13042·4
$[A_7]$ O .		14	III.		3		7660·778	2·07	,,	13050·0
O .		14	III.		3		7659·658	,,	,,	13051·9
$[A_2]$ O .		14	III.		3		7628·585	,,	,,	13105·1
O .		14	III.		3		7627·232	,,	,,	13107·4
$[A_1]$ O .		12	III.		4		7624·853	2·06	,,	13111·5
O .		12	III.		4		7623·526	,,	3·6	13113·7
[A†] O .		10	II.		5		7621·277	,,	,,	13117·6
[A*] O .					4		7594·059	,,	,,	13164·6
? .		3			1		7545·921	2·04	,,	13249·2
? .		6			3		7511·286	2·03	,,	13309·7
? .		6			3		7495·351	,,	,,	13338·0
? .		6			2		7462·609	2·02	,,	13396·5
? .		6			3		7446·038	,,	,,	13426·4
? .		6			2		7409·554	2·01	,,	13492·5
? .		7			2		7389·696	2·00	3·7	13528·7
? .		2			3		7331·206	1·99	,,	13636·6
? .		2			3		7321·056	1·98	,,	13655·5
wv ? .		5″			4		7318·818	,,	,,	13659·7
wv ? .		7			4		7304·475	,,	,,	13686·5
wv ? .		4			3		7300·056	,,	,,	13694·8
wv ? .		10″			3		7290·714	,,	,,	13712·4
wv ? .		6			3		7287·689	,,	,,	13718·1
wv ? .		8			4		7273·256	1·97	,,	13745·3
? .		3			2		7270·205	,,	,,	13751·1
wv ? .		8			3		7265·833	,,	,,	13759·3
wv ? .		8			3		7264·851	,,	,,	13761·2
wv ? .		4			2		7247·461	1·96	,,	13794·2
wv ? .		15	III.		4		7243·904	,,	,,	13801·0
wv ? .		4			5		7240·972	,,	,,	13806·6
? .		8	III.		4		7233·171	,,	,,	13821·5
? .		3			3		7232·509	,,	,,	13822·8
? .		6			4		7227·765	,,	,,	13831·8
? .		8	III.		5		7223·930	,,	,,	13839·2
wv ? .		6			4		7216·812	,,	,,	13852·8

* Beginning of h[illegible]l of A, outside edge. † Single line at the beginning of the tail of A.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character In Arc	Intensity and Character In Sun	Kind of Standard	Weight In Arc	Weight In Sun	Wave-lengths In Arc (a)	Wave-lengths In Sun (b)	Reduction to Vacuo $\lambda +$	Reduction to Vacuo $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
wv .		10	III.		5		7201·468	1·95	3·8	13882·3
wv .		10	III.		5		7200·753	,,	,,	13883·6
wv .		7			3		7193·921	,,	,,	13896·8
wv ? .		5″			6		7186·552	,,	,,	13911·1
wv ? .		4			7		7184·781	,,	,,	13914·5
wv ? .		3			6		7176·347	,,	,,	13930·9
? .		3			5		7168·191	1·94	,,	13946·7
? .		7	II.		4		7148·427	,,	,,	13985·3
? .		1			4		7147·942	,,	,,	13986·2
? .		6	II.		5		7122·491	1·93	,,	14036·2
? .		4	II.		5		7090·645	1·92	,,	14099·3
? .		4	III.		10		7040·058	1·91	,,	14200·6
? .		2			6		7038·470	,,	,,	14203·8
? .		6	II.		8		7035·159	,,	,,	14210·5
? .		3			7		7027·726	,,	,,	14225·6
? .		1			1		7027·199	,,	,,	14226·6
? .		3″	IV.		2		7024·988	1·90	,,	14231·1
? .		3	IV.		7		7023·747	,,	,,	14233·6
? .		4	IV.		1		7023·225	,,	,,	14234·5
wv ? .		6	IV.		9		7016·690	,,	3·9	14247·8
wv ? .		3	IV.		5		7016·279	,,	,,	14248·7
? .		3	III.		6		7011·585	,,	,,	14258·2
? .		5	IV.		5		7006·160	,,	,,	14269·3
? .		4	III.		3		7000·143	,,	,,	14281·5
wv ? .		5″	IV.		6		6999·174	,,	,,	14283·5
wv ? .		5	III.		7		6989·240	,,	,,	14303·8
wv .		5	II.		10		6986·832	1·89	,,	14308·7
? .		2			5		6978·655	,,	,,	14325·5
wv ? .		6	III.		12		6961·518	,,	,,	14360·8
wv ? .		3	III.		10		6959·708	,,	,,	14364·5
wv .		8	I.		12		6956·700	,,	,,	14370·7
? . . / wv ? .		1 / 2 ″	IV.		4		6953·838	,,	,,	14376·6
wv ? .		8	I.		10		6947·781	1·88	,,	14389·2
$[B_{12}]$ O .		1	III.		5		6935·530	,,	,,	14414·6
O .		1	III.		4		6934·646	,,	,,	14416·4
$[B_{11}]$ O .		2	II.		8		6929·838	,,	,,	14426·4
O .		2	II.		5		6928·992	,,	,,	14428·2
$[B_{10}]$ O .		3	I.		11		6924·420	,,	,,	14437·7
O .		3	I.		8		6923·557	,,	,,	14439·5
$[B_9]$ O .		4	I.		9		6919·245	,,	,,	14448·5
O		4	I.		5		6918·363	,,	,,	14450·4
? .		2	II.		5		6916·957	,,	,,	14453·3
Ni . .	5	3	II.		4		6914·819	,,	,,	14457·8
$[B_8]$ O .		5	I.		4		6914·328	,,	,,	14458·8
O .		5	I.		5		6913·454	,,	,,	14460·6
$[B_7]$ O .		6	I.		9		6909·675	1·87	,,	14468·6
O .		6	I.		5		6908·785	,,	,,	14470·4
$[B_6]$ O .		6	I.		5		6905·263	,,	,,	14477·8
O .		6	I.		5		6904·358	,,	,,	14479·7
$[B_5]$ O .		6	I.		8		6901·113	,,	,,	14486·5
O .		6	I.		6		6900·199	,,	,,	14488·4
$[B_4]$ O .		6	I.		8		6897·195	,,	,,	14494·7
O .		6	I.		7		6896·292	,,	,,	14496·6

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character In Arc	Intensity and Character In Sun	Kind of Standard	Weight In Arc	Weight In Sun	Wave-lengths In Arc (a)	Wave-lengths In Sun (b)	Reduction to Vacuo $\lambda +$	Reduction to Vacuo $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
[B_3] O .		6	I.		5		6893·559	1·87	3·9	14502·4
O .		6	I.		5		6892·614	,,	,,	14504·4
[B_2] O .		5	I.		5		6890·149	,,	,,	14509·6
O .		5	I.		5		6889·194	,,	,,	14511·6
[B_1] O .		5	I.		12		6886·987	,,	,,	14516·2
O .		5	I.		12		6886·008	,,	,,	14518·3
[B] O .		4	I.		13		6884·083	,,	,,	14522·4
Cr . .	3	1	III.		5		6883·318	,,	,,	14524·0
Cr . .	2	1	III.		5		6882·772	,,	,,	14525·1
Cr . .	1	1	III.		5		6881·970	,,	,,	14526·8
[B] O .		3	I.		11		6880·176	,,	,,	14530·6
O .		5	I.		11		6879·294	,,	,,	14532·5
[B] O .		5	I.		7		6877·878	,,	,,	14535·5
O .		5	I.		7		6876·957	,,	,,	14537·4
[B] O .		5	I.		9		6875·826	,,	,,	14539·8
O .		5	I.		5		6874·884	,,	,,	14541·8
O .		5	I.		5		6874·039	,,	,,	14543·6
[B] O .		5	I.		4		6873·076	1·86	,,	14545·6
O .		5	I.		5		6872·493	,,	,,	14546·9
[B] O .		5	II.		6		6871·527	,,	,,	14548·9
O .		5	II.		6		6871·179	,,	,,	14549·6
[B*] O .		4, 4 ″	I.		12		6870·186	,,	,,	14551·7
[B] O .		4 ″	II.		5		6869·347	,,	,,	14553·5
O .		4	II.		5		6869·141	,,	,,	14554·0
[B] O .		3, 1 ″	IV.		3		6868·779	,,	,,	14554·7
O .		6″	III.		2		6868·393	,,	,,	14555·5
O .		1	IV.		2		6868·124	,,	,,	14556·1
[B†] O .		3	II.		11		6867·800	,,	,,	14556·8
O .		3	II.		11		6867·461	,,	,,	14557·5
Fe . .		3	II.		10		6855·425	,,	,,	14583·1
Fe . .		3	II.		5		6843·908	,,	,,	14607·6
Fe . .		3	II.		6		6841·591	,,	,,	14612·6
Fe . .		2	II.		7		6828·850	1·85	4·0	14639·7
Fe . .		2	II.		5		6820·614	,,	,,	14657·4
Fe . .		3	I.		8		6810·519	,,	,,	14679·2
Fe . .		2	II.		6		6807·100	,,	,,	14686·5
Fe . .		1	III.		5		6787·137	1·84	,,	14729·7
Ni . .	2	3	II.		10		6772·565	,,	,,	14761·5
Ni . .	5	4	I.		9		6768·044	,,	,,	14771·3
Fe . .		2	II.		7		6752·962	1·83	,,	14804·3
Fe . .		4	I.		12		6750·412	,,	,,	14809·9
Fe . .		3	III.		7		6726·923	,,	,,	14861·6
? .		3	III.		10		6722·095	,,	,,	14872·3
Ca . .	10	5	III.		10		6717·934	1·82	,,	14881·5
Li ‡ . .	75		M.	3		6708·070		,,	,,	14903·4
? .		3	III.		12		6705·353	,,	,,	14909·5
? . .		2	III.		10		6703·813	,,	,,	14912·9

* The principal line in the head of B, a difficult double.

† These two lines are at the beginning of the head of B. There is a fine line midway between them.

‡ A difficult triplet.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	+	$\frac{1}{\lambda}$ −	
Fe . .		5	I.		10		6678·232	1·81	4·0	14970·0
Fe . .		4 ″	I.		6		6663·696	,,	4·1	15002·6
? . .		1	I.		4		6663·525	,,	,,	15003·0
Ni . .	5	5	I.		10		6643·882	1·80	,,	15047·3
Fe . .		3	III.		7		6633·992	,,	,,	15069·8
Fe . .		4	I.		9		6609·345	,,	,,	15126·0
Fe . .		4	I.		12		6594·115	1·79	,,	15160·9
Fe . .		5	I.		11		6593·161	,,	,,	15163·1
Fe . .		4	IV.		7		6575·179	,,	,,	15204·6
? . .		2	III.		5		6574·477	,,	,,	15206·2
wv . .		1	III.		6		6572·312	,,	,,	15211·2
Fe . .		6	I.		13		6569·461	1·78	,,	15217·8
[C]H .		30	I.		13		6563·054	,,	,,	15232·7
wv . .		2	III.		6		6552·840	,,	,,	15256·5
Fe . .	?	6	I.		11		6546·486	,,	,,	15271·3
Ti . .	3									
? . .		3	I.		12		6534·173	,,	,,	15300·1
wv . .		1	III.		7		6532·546	1·77	,,	15303·9
Fe . .		4	II.		10		6518·594	,,	,,	15336·6
? . .	6	4	III.		7		6516·315	,,	,,	15342·0
Ca . .	5	5	I.		10		6499·871	,,	4·2	15380·7
Fe . .		7	I.		9		6495·209	,,	,,	15391·8
Ca . .	8	6	I.		10		6494·001	1·76	,,	15394·6
? . .		4	I.		8		6482·099	,,	,,	15422·9
wv . .		1	III.		6		6480·264	,,	,,	15427·3
Ca . .	5	5	I.		7		6471·881	,,	,,	15447·2
Fe . .	?	3 ″	I.		9		6462·835	,,	,,	15468·9
Ca . .	10	9								
Ca . .	5	6	I.		6		6450·029	1·75	,,	15499·6
Ca . .	10r	7	I.		11		6439·298	,,	,,	15525·4
Cd . .			M.	1		6438·680		,,	,,	15526·9
Fe . .		6	I.		10		6431·063	,,	,,	15545·3
Fe . .		6	III.		10		6421·569	,,	,,	15568·3
Fe . .		5	I.		8		6420·171	,,	,,	15571·7
Fe . .		7	I.		10		6411·864	1·74	,,	15591·9
Fe . .		6	I.		8		6408·231	,,	,,	15600·7
Fe . .		3	IV.		6		6400·509	,,	,,	15619·6
Fe . .		8	IV.		5		6400·200	,,	,,	15620·3
Fe . .		7	I.		9		6393·818	,,	,,	15635·9
Fe . .		4	I.		6		6380·951	1·73	,,	15667·4
Ni . .	5	2	IV.		2		6378·461	,,	,,	15673·6
Fe . .		6	I.		8		6358·902	,,	4·3	15721·7
Fe . .		5	III.		8		6355·259	,,	,,	15730·7
Fe . .		5	I.		6		6344·370	,,	,,	15757·7
Fe . .		6	I.		12		6337·042	1·72	,,	15775·9
Fe . .		6	I.		12		6335·550	,,	,,	15779·6
Fe . .		5	I.		13		6322·912	,,	,,	15811·2
Fe-(Ca) .		6	I.		14		6318·242	,,	,,	15822·9
Fe . .		3	IV.		5		6315·541	,,	,,	15829·7
Ni . .	6	4	I.		7		6314·874	,,	,,	15831·3
Fe . .		7	I.		7		6301·719	1·71	,,	15864·4
O . .		3	I.		7		6296·144	,,	,,	15878·4
O* . .		3	III.		6		6293·152	,,	,,	15886·0

* Second line in the second pair of tail of *a*.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	$\lambda +$	$\frac{1}{\lambda} -$	
O* . .		2	II.		5		6289·608	1·71	4·3	15894·9
O . .		2	II.		7		6281·374	,,	,,	15915·8
[a] O† .		4″	I.		9		6278·289	,,	,,	15923·6
Fe . .		3	I.		10		6270·439	,,	,,	15943·5
Fe . .		5	I.		11		6265·347	1·70	,,	15956·5
Ti . .	5	2	I.		9		6261·316	,,	,,	15966·8
Fe . .	?	6	I.		8		6256·574	,,	,,	15978·9
Ni . .	7									
Fe‡ . .		7	I.		9		6254·454	,,	,,	15983·8
Fe . .		7	I.		9		6252·776	,,	,,	15988·6
Fe . .		7	I.		9		6246·530	,,	,,	16004·6
? . .		4	I.		8		6237·529	,,	,,	16027·7
Fe-Va .	?-6	7	I.		12		6230·946	1·69	,,	16044·6
Fe . .		6	I.		10		6219·493	,,	4·4	16074·1
Fe . .		6	I.		9		6213·646	,,	,,	16089·2
Fe . .		6	I.		10		6200·533	,,	,,	16123·2
Fe . .		8	I.		10		6191·770	1·68	,,	16146·1
Ni . .	4	6	I.		9		6191·397	,,	,,	16147·0
Fe . .		6	I.		8		6180·419	,,	,,	16175·7
Ni . .	5	6	I.		8		6177·028	,,	,,	16184·6
Fe . .		6	I.		8		6173·554	,,	,,	16193·7
Ca . .	7	7	I.		8		6169·775	,,	,,	16203·6
Ca . .	6	6	I.		4		6169·260	,,	,,	16205·0
Ca . .	15r	10	I.		9		6162·383	,,	,,	16223·1
Na . .		5	I.		4		6160·970	,,	,,	16226·8
Na . .		3	I.		5		6154·431	1·67	,,	16244·0
Fe-Ba .	?-15	7	I.		9		6141·934	,,	,,	16277·1
Fe . .		8	II.		9		6136·834	,,	,,	16290·6
Ca . .	15r	9	I.		11		6122·428	,,	,,	16329·0
Fe . .	5	6	I.		8		6116·415	1·66	,,	16345·0
Ni . .	4	3	II.		8		6111·287	,,	,,	16358·8
Ni . .	5	6	I.		8		6108·338	,,	,,	16366·7
Li . .	20		M.	4		6103·812		,,	,,	16378·8
? .		1	IV.		8		6103·449	,,	,,	16379·8
Fe .		4								
Ca . .	10r	6	I.		9		6102·941	,,	,,	16381·1
Fe . .		4	II.		4		6102·408	,,	,,	16382·6
Fe . .		3	I.		12		6079·223	1·65	4·5	16445·0
Fe . .		5	I.		13		6078·709	,,	,,	16446·4
Fe . .		7	I.		13		6065·708	,,	,,	16481·6
Fe . .		5	I.		9		6056·232	,,	,,	16507·4
Fe . .		4	I.		8		6042·316	1·64	,,	16545·4
Fe . .		4	I.		7		6027·265	,,	,,	16586·8
Fe . .		6	I.		8		6024·280	,,	,,	16595·0
Mn . .	10	5	I.		6		6022·017	,,	,,	16601·2
Fe . .		5	IV.		6		6020·347	,,	,,	16605·8
? . .		3								
Mn . .	10	6	I.		8		6016·856	,,	,,	16615·5
Mn . .	10	6	I.		5		6013·717	,,	,,	16624·1
Fe . .		6	I.		6		6008·782	,,	,,	16637·8

* First line of first pair in the tail of *a*.
† Chief line in the *a* group, a very close double.
‡ A difficult double.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character: In Arc	Intensity and Character: In Sun	Kind of Standard	Weight: In Arc	Weight: In Sun	Wave-lengths: In Arc (a)	Wave-lengths: In Sun (b)	Reduction to Vacuo: $\lambda +$	Reduction to Vacuo: $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
Fe . .		4	I.		3		6008·196	1·64	4·5	16639·4
Fe . .		6	I.		7		6003·245	1·63	,,	16653·2
Fe . .		6	I.		7		5987·286	,,	,,	16697·6
Fe . .		6	I.		6		5985·044	,,	,,	16703·8
wv .		2	IV.		1		5977·254	,,	,,	16725·6
Fe . .		5	III.		13		5977·005	,,	,,	16726·2
Fe . .		4	I.		12		5975·576	,,	,,	16730·3
Fe . .		5	I.		12		5956·925	1·62	4·6	16782·6
Si . .		6	I.		14		5948·761	,,	,,	16805·6
Fe . .		6	I.		13		5934·883	,,	,,	16844·9
Fe . .		6	I.		14		5930·410	,,	,,	16857·6
wv .		6	I.		12		5919·855	1·61	,,	16887·7
Fe . .		5	I.		16		5916·475	,,	,,	16897·4
? wv. . Fe . .		5 4	I.		17		5914·384	,,	,,	16903·3
Fe . .		5	I.		15		5905·895	,,	,,	16927·6
Fe } . wv } .		1 5	IV.		13		5901·681	,,	,,	16939·7
Fe ? } . wv } .		1 3	IV.		10		5898·395	,,	,,	16949·2
[D_1]N .		10	I.		20		5896·154	,,	,,	16955·6
Ni* . .	3″	4	III.		14		5893·098	,,	,,	16964·4
[D_2]Na .		15	II.		20		5890·182	1·60	,,	16972·8
w .		3	IV.		8		5889·854	,,	,,	16973·7
w . Fe . .		4 6	IV.		11		5884·048	,,	,,	16990·5
[D_3] H .							5875·982	,,	,,	17013·8
Fe . .		6	I.		16		5862·580	,,	,,	17052·7
Fe . .		6	I.		15		5859·810	,,	,,	17060·8
Ca . .	10	7	II.		14		5857·672	,,	,,	17067·0
Ba . .	10	5	I.		14		5853·903	1·59	,,	17077·9
Ni . .	3	3	II.		6		5831·832	,,	4·7	17142·6
Fe . .		6	IV.		14		5816·594	,,	,,	17187·5
Fe . .		5	I.		14		5809·437	,,	,,	17208·7
Fe . .		5	I.		7		5806·954	,,	,,	17216·0
Ni . .	7	5	I.		8		5805·448	1·58	,,	17220·5
Fe . .		5	I.		9		5798·400	,,	,,	17241·4
? . .		4	I.		10		5798·087	,,	,,	17242·4
Fe } Cr } .	10	7	I.		16		5791·207	,,	,,	17262·8
Cr . .	7	5	I.		13		5788·136	,,	,,	17272·0
Cr . .	6	4	I.		9		5784·081	,,	,,	17284·1
Cu ? Co ? .		7	I.		9		5782·346	,,	,,	17289·3
Fe . .		5	I.		9		5775·304	1·57	,,	17310·4
Si . .		5	I.		6		5772·360	,,	,,	17319·2
Fe . .		7	IV.		8		5763·215	,,	,,	17346·7
? } Ni } .		5	I.		9		5754·884	,,	,,	17371·8
Fe . .		5	I.		10		5753·342	,,	,,	17376·5
Fe . .		4	I.		10		5752·257	,,	,,	17379·8
Fe . .		3	III.		10		5742·066	,,	,,	17410·6
Fe . .		5	I.		10		5731·973	1·56	,,	17441·3

* An exceedingly close double.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ	$\frac{1}{\lambda}$ –	
Fe Ti } .	3	} 5	I.		10		5715·309	1·56	4·8	17492·1
Ni } .	5									
Mg*. .		6	M. III.	4		5711·374	5711·318	,,	,,	17504·3*b*
Ni . .	5	5	} III.		8		5709·760	,,	,,	17509·1
Fe . .		6	} III.		6		5709·616	,,	,,	17509·5
Si . .		5	I.		4		5708·620	,,	,,	17512·6
Fe . .	4	5	I.		8		5701·769	1·55	,,	17533·6
Na . .		6	I.		7		5688·434	,,	,,	17574·7
Na . .	3	4	I.		9		5682·861	,,	,,	17592·0
Fe . .	2	3	I.		8		5679·249	,,	,,	17603·2
Ti . .	3	2	III.		8		5675·648	,,	,,	17614·3
Fe . .	3	5	I.		9		5662·745	1·54	,,	17654·5
Yt ? . .	1	4	I.		9		5658·096	,,	,,	17669·0
Fe . .	2	4	II.		9		5655·707	,,	,,	17676·5
Si . .		2	III.		9		5645·835	,,	,,	17707·4
Fe . .	2	3	I.		10		5641·661	,,	,,	17720·5
Fe . .	2	3	I.		5		5634·167	,,	,,	17744·0
Fe-Va .	5, 2	4	I.		14		5624·768	1·53	,,	17773·7
Fe . .	2	2	I.		12		5624·253	,,	,,	17775·3
Fe . .	2	6	II.		10		5615·879	,,	,,	17801·8
Fe . .	2	2	II.		10		5615·526	,,	,,	17803·0
Fe } .	5	5	}							
Ca } † .	6	3	} II.		10		5603·097	,,	4·9	17842·4
Fe } .	2	2	}							
Ca . .	5	4	M. I	2	4	5601·502	5601·501	,,	,,	17847·5*b*
Ca . .	7	4	II.	2	4	5598·712	5598·715	,,	,,	17856·3*b*
Fe . .	3	2	II.	1	2	5598.563	5598·555	,,	,,	17856·8*b*
Ca . .	7r	5	M. III.	2	5	5594·689	5594·695	,,	,,	17869·2*b*
Ca . .	5	4	M. I.	2	5	5590·352	5590·342	1·52	,,	17883·1*b*
Ca . .	10r	6	M. I.	2	9	5588·977	5588·980	,,	,,	17887·4*b*
Ca . .	6	4	M. I.	2	9	5582·204	5582·195	,,	,,	17909·2*b*
Fe . .	5	4	I.		7		5576·319	,,	,,	17928·1
Fe . .	6	5	I.		8		5569·848	,,	,,	17948·9
Fe . .	4	3	II.		8		5555·113	,,	,,	17996·5
Fe . .	3	2	I.		9		5544·158	1·51	,,	18032·1
Fe . .	3	2	I.		8		5543·418	,,	,,	18034·5
Fe . .		2	I.		8		5535·073	,,	,,	18061·7
Mg‡. .	10	7	I.	4	8	5528·672	5528·636	,,	,,	18082·7*b*
Ca . .	5	3	III.	1	8	5513·127	5513·207	1·50	,,	18133·4*b*
Fe . .	5	4	I.		8		5507·000	,,	,,	18153·8
Fe . .	5	4	I.		8		5501·685	,,	5·0	18171·2
Fe . .	3	4	I.		8		5497·731	,,	,,	18184·3
Fe . .	2	3	II.		5		5487·968	,,	,,	18216·7
Ni . .	15r	4	I.		10		5477·128	,,	,,	18252·7
Fe . .	3	3	I.		10		5466·608	1·49	,,	18287·9
Fe . .	3	4	I.		10		5463·493	,,	,,	18298·3
Fe . .	3	4	I.		9		5463·174	,,	,,	18299·4

* Not recommended as a standard *in the arc.*

† Fe 5603·180 }
Ca 5603·080 }
Fe 5602·995 }

‡ In the arc this line is diffuse on one side. The solar line corresponds to the edge of the band-like line.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character: In Arc	Intensity and Character: In Sun	Kind of Standard	Weight: In Arc	Weight: In Sun	Wave-lengths: In Arc (a)	Wave-lengths: In Sun (b)	Reduction to Vacuo: $\lambda +$	Reduction to Vacuo: $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
Ni . .	3	1	II.		7		5462·732	1·49	5·0	18300·9
Fe .	6	6	III.		1		5455·826	,,	,,	18324·0
.			II.		8		5455·759	,,	,,	18324·3
Fe ? .		3	III.		1		5455·666	,,	,,	18324·6
Fe* . .	7	7	I.	1	9	5447·116	5447·130	,,	,,	18353·3*b*
Fe . .	5	6	I.	1	9	5434·725	5434·742	1·48	,,	18395·1*b*
Fe . .	5	7	I.		10		5424·284	,,	,,	18430·6
Va . .	3									
Va . ,	4	6	I.		12		5415·421	,,	,,	18460·8
Fe . .	4									
Cr . .	10r	5	I.		7		5410·000	,,	,,	18479·3
Fe . .	7	7	I.	1	14	5405·979	5405·987	,,	,,	18493·0*b*
Fe . .	7	7	I.	1	12	5397·319	5397·346	1·47	5·1	18522·5*b*
Fe . .	4	5	I.		11		5393·378	,,	,,	18536·2
Fe . .	3	4	I.		11		5389·683	,,	,,	18548·9
Fe . .	6	6	I.		11		5383·576	,,	,,	18569·9
Fe . .	2	3	I.		9		5379·776	,,	,,	18583·0
Fe-Cr † .	9, 2	7	IV.		8		5371·686	,,		18611·0
Ni .	2	2								
Fe . .	4	6	I.		8		5370·165	,,	,,	18616·3
Fe . .	4	6	I.		8		5367·670	,,	,,	18625·0
?	?	3	IV.		1		5363·056	1·46	,,	18641·0
Fe (Co)	1, 3	1	III.		5		5363·011	,,	,,	18641·1
?		2	III.		7		5361·813	,,	,,	18645·3
Fe-Ni .	3, 3	4	IV.		8		5353·592	,,	,,	18673 9
Th ‡. .	75		M.	2		5350·670		,,	,,	18684·1
Ca . .	7	5	M. III.	1	4	5349·599	5349·623	,,	,,	18687·8*b*
Fe ?. .	3	4	II.		9		5333·092	,,	,,	18745·7
Fe . .	9	8	I.		8		5324·373	1·45	,,	18776·4
Co ?. .	2	3	III.		1		5316·950	,,	,,	18802·7
[1474] .		6	III.		7		5316·870	,,	,,	18803·0
Fe ?. §		4	III.		1		5316·790	,,	,,	18803·2
Fe . .	3	4	I.		10		5307·546	,,	,,	18836·0
Cr . .	2	3	I.		9		5300·918	,,	5·2	18859·5
Cr . .	6r	4	I.		12		5296·873	,,	,,	18873·9
Fe . .	2	2	I.		12		5288·708	1·44	,,	18903·0
Fe . .	5	6	I.		11		5283·803	,,	,,	18920·6
Fe . .	4	5	I.		11		5281·968	,,	,,	18927·1
Co . .	3	1	I.		11		5276·205	,,	,,	18947·8
Cr . .	5	2								
?	?	2								
Fe .	3	3	I.		8		5273·554	,,	,,	18957·3
.	6		II.		5		5273·443	,,	,,	18957·7
Fe .	3	3	I.		6		5273·344	,,	.,	18958·1
Fe .	6	4	M. III.		3		5270·533	,,	,,	18968·2
[E_1] .			I.		12		5270·495	,,	,,	18968·3
Ca .	10	4	M. III.	2	3	5270·445	5270·448	,,	,,	18968·5*b*
E_2 Fe* .	8	8	I.	1	16	5269·714	5269·722	,,	,,	18971·1*b*

* A difficult double.

† The red component, a difficult double. ‡ A difficult triplet.

§ The 1474 lines is a triplet, or rather a double, the red component of which has a weak side-line to the violet; probably the violet component is due to iron, and the weak line to cobalt, but the red is unknown.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ +	$\frac{1}{\lambda}$ −	
[Fe	6	6	I.	1	8	5266·733	5266·729	1·44	5·2	18981·9*b*
Cr (Ni ?)	4r	2	III.		1		5265·884	,,	,,	18985·0
		5	III.		2		5265·789	,,	,,	18985·3
Ca	8	3	III.	1	2	5265·725	5265·727	,,	,,	18985·5*b*
Ca	6	3	M. III.	2	3	5264·408	5264·395	,,	,,	18990·3*b*
		6	I.		2		5264·371	,,	,,	18990·4
Cr	4r	3	III.		3		5264·327	,,	,,	18990·6
Ca	6	2	III.	2	5	5262·408	5262·391	,,	,,	18997·6*b*
?		1	M. IV.		1		5262·341	,,	,,	18997·7
Cr Ca	2 6	3	III.	1	12		5261·880	,,	,,	18999·4
Ca	2	1	M. IV.	1	5	5260·556	5260·557	,,	,,	19004·2*b*
Fe	2	3	I.		12		5253·649	,,	,,	19029·2
Fe	3	3	I.		11		5250·825	1·43	,,	19039·4
Fe	2	2	I.		11		5250·391	,,	,,	19041·0
Fe	3	3	I.		10		5242·662	,,	,,	19069·1
Fe	7	8	I.		9		5233·124	,,	,,	19103·8
Fe	4	4	I.		8		5230·014	,,	,,	19115·2
Fe	2	2	I.		10		5225·690	,,	,,	19131·0
Fe	3	4	I.		10		5217·559	,,	,,	19160·8
Fe	3	4	I.		10		5215·352	,,	,,	19169·0
Ti	10r	3	M. I.	2	12	5210·549	5210·556	1·42	,,	19186·6*b*
Fe Cr	3 8r	3 4	I.		10		5204·708	,,	5·3	19208·1
Fe ?	4 ?	3 2	I.		11		5202·483	,,	,,	19216·3
Fe	3	4	I.		10		5198·885	,,	,,	19229·6
Ti	8	3	M. I.	2	8	5193·134	5193·139	,,	,,	19250·9*b*
Ca			M. I.	1	3	5189·019	5189·020	,,	,,	19266·2*b*
	6	4	I.		7		5188·948	,,	,,	19266·4
Ti	2	4	I.		3		5188·863	,,	,,	19266·7
[b_1]Mg	40r	20	M. I.	2	11	5183·791	5183·792	,,	,,	19285·6*b*
Ti	10r	3	I.		11		5173·912	1·41	,,	19322·4
[b_2]Mg	35r	10	M. I.	2	9	5172·866	5172·871	,,	,,	19326·3*b*
Fe	5	5	I.		11		5171·783	,,	,,	19330·4
Fe	3	4	I.		3		5169·218	,,	,,	19340·0
[b_3]			I.		5		5169·161	,,	,,	19340·2
Fe	3	4	I.		3		5169·066	,,	,,	19340·5
Fe	6	6	M. IV.	2	3	5167·664	5167·686	,,	,,	19345·7*b*
[b_4]			III.		7		5167·572	,,	,,	19346·1
Mg	20r	8	M. IV.	2	3	5167·488	5167·501	,,	,,	19346·4*b*
Fe	2	2	I.		10		5165·588	,,	,,	19353·6
C*		1	M.	2	1	5165·241	5165·190	,,	,,	19354·9*a*
Fe	4	4	I.		13		5162·448	,,	,,	19365·4
Fe ?		2	I.		11		5159·240	,,	,,	19377·4
Ni	6	2	I.		10		5155·937	,,	,,	19389·8
Ti ? Co ?		2	I.		10		5154·237	,,	,,	19396·2
Mn Fe	2 4	1 3	III.		9		5151·026	,,	,,	19408·3
? Ni	? 5	3	I.		10		5146·664	,,	,,	19424·8

* In the arc the first line of the first head of the green carbon band.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave Lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	$+\lambda$	$\frac{1}{\lambda}-$	
Fe			IV.		2		5143·106	1·41	5·3	19438·2
	3	4	IV.		5		5143·042	,,	,,	19438·4
Ni	5	2	IV.		1		5142·967	,,	,,	19438·7
Fe	2	3	I.		5		5141·916	,,	,,	19442·7
Fe			III.		4		5139·645	,,	,,	19451·3
	5	6	III.		4		5139·539	,,	,,	19451·7
Fe	4	6	III.		4		5139·437	,,	,,	19452·1
?	?	6	I.		12		5133·871	1·40	,,	19473·2
Fe	1									
Fè	4	4	I.		9		5127·530	,.	,,	19497·3
Co	3	2	I.		9		5126·369	,,	,,	19501·7
Fe	3	3	IV.		9		5121·797	,,	,,	19519·1
Ni	2	1								
Ni	5	2	I.		9		5115·558	,,	5·4	19542·8
Fe	4	3	II.		11		5110·570	,,	,,	19561·9
?	?	2								
Fe	3	2	I.		11		5109·825	,,	,,	19564·7
Fe (Cu)	3 ?	3	I.		12		5105·719	,,	,,	19580·5
Fe	3	2	IV.		7		5097·176	1·39	,,	19613·3
Fe	3	2	I.		9		5090·959	,,	,,	19637·3
Cd		?	M.	1		5086·001		,,	,,	19656·4
Fe	4	3	I.		9		5083·525	,,	,,	19666·0
Fe	4	4	I.		14		5068·946	,,	,,	19722·6
Ti	10	3	II.		12		5064·833	,,	,,	19738·6
Fe	2	2	II.		15		5060·252	1·38	,,	19756·5
Fe	5	5	I.		12		5050·008	,,	,,	19796·5
Ca	3	2	M.	2	1	5041·867	5041·795	,,	,,	19828·5*a*
Ni	3	2	II.		8		5036·113	,,	,,	19851·2
Ti	6	3								
Ti	7	3	II.		8		5020·210	1·37	5·5	19914·0
Ti	5	4	M. II.		10	5014·412	5014·422	,,	,,	19937·5*b*
(Ni) Ti	?-10	3								
Mg b'd*			M.	3	10	5007·473		,,	,,	19964·6
Nebula						5007·05		,,	,,	19966·3
Fe	3	3	I.		10		5007·431	,,	,,	19964·8
Ti	10r	4								
Fe		6	I.		8		5006·303	,,	,,	19969·3
Fe	3	4	II.		10		5005·904	,,	,,	19970·9
Pb			M.	5		5005·634		,,	,,	19972·0
Ti-La	10r 10r	4	M. III.		8	4999·668	4999·693	,,	,,	19995·7*b*
Fe	3	4	I.		7		4994·316	,,	,,	20017·3
Ti	10	4	III.	1	10	4981·893	4981·915	1·36	,,	20067·1*b*
?	?	1	III.		5		4980·362	,,	,,	20073·4
Ni	5	3								
Fe	3	3	I.		8		4978·782	,,	,,	20079·7
?		1								
Fe	3	3	I.		10		4973·274	,,	,,	20102·0
Ti	1									
Nebula						4959·02		,,	,,	20159·8
Fe		8	M. IV.		3		4957·786	,,	,,	20164·8
Fe		6	M. IV.		3		4957·482	,,	,,	20166·0

* Commencement of the head of Mg band.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ +	$\frac{1}{\lambda}$ −	
Ba*	60	7	M. III.	1	10	4934·237	4934·247	1·35	5·6	20260·9*b*
Fe	3	2	I.		12		4924·955	,,	,,	20299·2
Fe	2	4	II.		13		4924·109	,,	,,	20302·6
Fe	9	9	M. I.	1	7	4920·676	4920·682	,,	,,	20316·8*b*
Fe	6	7	I.		4		4919·183	,,	,,	20323·0
Pb			M.	1		4905·634		1·34	,,	20379.1
Fe }	5		} I.		14		4903·488	,,	,,	20388·0
Cr }	2	6								
Yt		2	II.		11		4900·306	,,	,,	20401·3
Ti	4	2	II.		11		4900·098	,,	,,	20402·1
Fe	7	7	I.		11		4890·945	,,	,,	20440·3
[F] H		15	II.		5		4861·496	1·33	5·7	20564·1
Fe	4	5	I.		14		4859·934	,,	,,	20570·8
Fe ?	·	4	I.		11		4824·325	1·32	,,	20722·6
Mn	10	6	M. I.	1	12	4823·715	4823·697	,,	,,	20725·3*b*
Zn		3	M. I.	1	1	4810·725	4810·723	,,	,,	20781·2*b*
Ti }	1	4	} IV.		3		4805·253	,,	,,	20804·8
? }	?	1								
Cd		?	M.	3		4800·097		1·31	,,	20827·2
Mn	10r	6	M. I.	1	1	4783·607	4783·601	,,	5·8	20898·9*b*
Mn	15r	6	I.		11		4754·226	1·30	,,	21028·1
Mn }	7	3	} III.		11		4727·628	1·29	,,	21146·5
Fe }	2	4								
Zn	4	4	M. I.	2	2	4722·339	4722·349	,,	,,	21170·1*b*
Ni	9r	6″	M. III.	1	1	4714·598	4714·599	,,	,,	21204·9*b*
Ni	3	3	I.		13		4703·986	,,	5·9	21252·7
Mg	5	9	I.	1	11	4703·249	4703·180	,,	,,	21256·3*b*
Fe }	3	4	} IV.		11		4691·581	1·28	,,	21308·9
Ti }	3	2								
?		4	II.		14		4690·324	,,	,,	21314·6
Ni	4	4	I.		12		4686·395	,,	,,	21332·5
Fe	2	3	I.		13		4683·743	,,	,,	21344·5
Zn		2	M.	1		4680·319		,,	,,	21360·2
Fe	3	6	II.		12		4679·028	,,	,,	21366·1
Cd		4?	M.	3	3	4678·339	4678·353	,,	,,	21369·1*b*
Fe }	3	5	} II.		11		4668·303	,,	,,	21415·2
? }		2								
Ni	6r	3	M. III.	1	1	4648·833	4648·835	1·27	,,	21504·9*b*
Fe	2	4	I.		17		4643·645	,,	,,	21528·9
Fe	3	4	II.		14		4638·194	,,	,,	21554·2
Fe	3	4	II.		14		4637·683	,,	,,	21556·6
Co }	5	} 5	II.		13		4629·515	,,	6·0	21594·5
Ti }	4									
Fe	4	6	} IV.		11		4611·453	1·26	,,	21679·1
? }	?	2								
Sr }	50r	2	M. II.	5	4	4607·506	4607·509	,,	,,	21697·7*a*
C†						4606·6		,,	,,	21702·0
Li	50r		M.	1		4602·25		,,	,,	21722·5
Fe	2	4	I.		20		4602·183	,,	,,	21722·8
Ti ?		4	I.		15		4590·129	,,	,,	21779·9
Cr ?		4	I.		14		4588·384	,,	,,	21788·2
Ca Ti	3, 1	4	I.	1	14	4578·807	4578·731	1·25	,,	21834·1*b*

* A difficult double. † First line in first head of blue cyanogen band (ζ).

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	1/λ −	
Ti	5	6	I.		14		4572·157	1·25	6·0	21865·5
Mg	3	5	I.	1	14	4571·281	4571·277	,,	,,	21869·7*b*
Ti	4	6	I.		13		4563·939	,,	6·1	21904·8
Ba	70r	7	M. I.	6	8	4554·212	4554·213	,,	,,	21951·6*b*
In			M.	3		4513·883		1·24	,,	22147·8
In			M.	4		4511·474		,,	,,	22159·6
Ti ?		4	I.		17		4508·456	,,	,,	22174·4
C						4502·6		1·23	,,	22203·3
Ti	6	5	II.		18		4501·444	,,	,,	22909·0
?		1	II.		7		4499·315	,,	,,	22219·5
Mn		2	I.		8		4499·070	,,	,,	22220·7
Zr	2	1	IV.		14		4497·041	,,	6·2	22230·7
Cr	5	4		1						
Fe		5	I.	2	18	4494·756	4494·735	,,	,,	22242·0
Ca	1	1	M. IV.	5	2	4456·791	4456·793	1·22	,,	22431·5
Ca	3r	2	M.	6	3	4456·055	4456·047	,,	,,	22435·2*a*
Ca	6r	6	M. IV.	2	6	4454·949	4454·950	,,	,,	22440·7*b*
Fe	8	5	I.	5	18	4447·912	4447·899	,,	,,	22476·3*b*
Ca	4r	3	M. I.	5	6	4435·856	4435·852	,,	,,	22537·4*b*
Ca	5r	4	M. III.	5	5	4435·133	4435·132	,,	,,	22541·0*b*
Ca	5r	4	M. I.	9	7	4425·616	4425·609	1·21	6·3	22589·5*b*
Fe	4r	4	M. III.	3	7	4415·298	4415·299	,,	,,	22642·2*a*
Cd	6	6	M.			4413·181		,,	,,	22653·1
Fe	3	3	III.		19		4407·850	,,	,,	22680·5
Va	9r	2								
Fe	10r	8	M. III.	10	11	4404·928	4404·927	,,	,,	22695·6*b*
Ti	1	1	III.		14		4391·149	1·20	,,	22766·8
Fe	2	3								
[d] Fe	15r	10	M. II.	10	11	4383·721	4383·721	,,	,,	22805·4
Fe	5	5	I.	1	17	4376·108	4376·103		,,	22845·1*b*
Fe	4	5	I.	1	14	4369·948	4369·943		,,	22877·3*b*
Zr	5	1	III.		10		4359·778	,,	6·4	22930·5
Cr	4	3								
Ni	3	1								
Fe	4	3	I.	1	17	4352·908	4352·903	1·19	,,	22966·8*b*
Fe	2	2	III.		11		4343·387	,,	,,	23017·1
Cr	2	1								
[f] Fe	10r	8	M. II.	8	15	4325·932	4325·940	,,	,,	23110·0*b*
Ca	4r	3	M. I.	3	16	4318·816	4318·818	1·18	,,	23148·1*b*
Fe	7r	5	III.	8	10	4308·072	4308·071	,,	6·5	23205·7*b*
[G]			III.		3		4308·034	,,	,,	23205·9*b*
Ca	4r	2	III.	3	3	4307·906	4307·904	,,	,,	23206·6*b*
Ti	10r	4	M. III.	4	4	4306·071	4306·071	,,	,,	23216·5
Sr	8	2	M.	1		4305·636		,,	,,	23218·9
Ca	6r	4	M.	5	7	4302·690	4302·689	,,	,,	23234·8*b*
Ca	3r	2	M. III.	3	5	4299·153	4299·152	,,	,,	23253·9*b*
?		4	II.		14		4293·249	,,	,,	23285·9
Cr	10r	4	M. III.	2	2	4289·884	4289·881	,,	,,	23304·2*b*
Ca	4r	3	M. III.	3	5	4289·527	4289·523	,,	,,	23306·1*b*
Ca	5r	3	M. III.	2	4	4283·175	4283·170	,,	,,	23340·7*b*
Cr	15r	5	M. III.	1	2	4274·954	4274·958	1·17	,,	23385·5*b*
Fe	10r	8	M. III.	8	9	4271·920	4271·924	,,	,,	23402·2*b*
Fe	1	2	III.		12		4267·958	,,	,,	23423·9
?	?	1								

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character: In Arc	Intensity and Character: In Sun	Kind of Standard	Weight: In Arc	Weight: In Sun	Wave-lengths: In Arc (a)	Wave-lengths: In Sun (b)	Reduction to Vacuo: $\lambda +$	Reduction to Vacuo: $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
Fe . .	6r	7	III.	4	3	4260·647	4260·638	1·17	6·5	23464·1*a*
Cr . .	20r	7	M. I.	2	15	4254·494	4254·502	,,	,,	23498·0*b*
Fe . .	5	7	II.	4	3	4250·949	4250·956	,,	6·6	23517·6*a*
Fe . .	4	5	II.	1	1	4250·300	4250·290	,,	,,	23521·2*b*
[*g*]Ca .	50r	10	M. III.	9	10	4226·898	4226·892	1·16	,,	23651·4*b*
Fe . .	2	4	I.	1	22	4222·396	4222·381	,,	,,	23676·7*b*
C* . .		1	M. III.	4	2	4216·133	4216·137	,,	,,	23711·8*a*
Sr .	40r	4	M. III.	6	3	4215·688	4215·687	,,	,,	23714·3*a*
					18		4215·667	,,	,,	23714·4
Fe .	2	?2	III.		2		4215·616	,,	,,	23714·7
Fe . .	8	5	II.	2	4	4202·187	4202·188	1·15	,,	23790·5*b*
Fe . Zr .	5 2	5	I.	2	22	4199·257	4199·263	,,	6·7	23807·0*b*
C† . .		1	M. III.	5	6	4197·256	4197·251	,,	,,	23818·4*b*
Fe . .	4	3	I.		20		4185·063	,,	,,	23887·8
C . .			M.			4158·2		1·14	,,	24042·2
Fe . .	4	3	I.		17		4157·948	,,	,,	24043·6
Fe-Cr .	3, 1	3	II.		13		4121·968	1·13	6·8	24253·5
Co ‡ . Cr .	10r 1	3 1	III.	1	12	4121·476	4121·481	,,	,,	24256·3*b*
Fe . .	3	4	I.		14		4114·600	,,	,,	24296·9
Fe . .	5	5	I.		12		4107·646	,,	,,	24338·0
Mn . Si .	1 3	6	I.		10		4103·101	,,	”	24365·0
Fe . .	2	2	I.		8		4088·716	1·12	6·9	24450·7
Fe . .	2	2	III.		7		4083·928	,,	,,	24479·3
Mn . Fe .	5 2	4 2	III.		7		4083·767	,,	,,	24480·3
Sr . .	50r	8	M. IV.	5	6	4077·876	4077·883	,,	,,	24515·6*b*
Fe . .	4	4	I.		14		4073·920	,,	,,	24539·5
Fe . .	10	10	M. IV.	7	9	4071·903	4071·904	,,	,,	24551·6*b*
Fe . .	15r	15	M. IV.	7	7	4063·755	4063·756	,,	,,	24600·9*b*
Fe . .	5	5	I.		8		4062·602	,,	,,	24607·9
Mn . .	8	5	I.		13		4055·701	,,	,,	24649·7
Cr . Mn . Zr .	2 8 1	6	III.		13		4048·893	1·11	7·0	24691·1
K . .	40r	1?	M.	2		4047·373		,,	,,	24700·4
Fe . .	20r	20	M. IV.	7	7	4045·975	4045·975	,,	,,	24708·9
K . .	50r	1	M.	2	2	4044·301	4044·293	,,	,,	24719·2*b*
Mn . .	7	3	M.			4035·88	4035·88	,,	,,	24770·7
Mn . .	20r	5	M.	3	4	4034·642	4034·641	,,	,,	24778·2*b*
Mn . .	25r	6	M.	3	4	4033·230	4033·225	,,	,,	24787·1*b*
Mn . .	30r	7	M.	3	4	4030·919	4030·914	,,	,,	24801·3*b*
Zr . Fe .	2 2	4	I.		10		4029·796	,,	,,	24808·1
Fe . .		3	I.		7		4016·578	,,	,,	24889·8
Fe-?§ .	10	10	III.		3		4005·305	1·10	,,	24959·9
Ce-Fe-Ti .	4, 1, 2	3	III.		9		4003·916	,,	,,	24968·5

* First line in first head of cyanogen band (θ).
† First line in second head of cyanogen band (θ). ‡ Cobalt line measured.
§ Seven or eight lines, the brightest and most of the others due to Fe.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character: In Arc	Intensity and Character: In Sun	Kind of Standard	Weight: In Arc	Weight: In Sun	Wave-lengths: In Arc (a)	Wave-lengths: In Sun (b)	Reduction to Vacuo: λ +	Reduction to Vacuo: $\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo
Co Mn ?	2 4 ?	6	III.		4		3987·216	1·10	7·1	25073·0
Mn ?	4 ?	1 7	III.		9		3986·903	,,	,,	25075·0
Fe Cr	3 5	6	III.		9		3984·078	,,	,,	25092·8
Fe-Ti	6?	4	III.		14		3981·914	,,	,,	25106·4
Fe	5	4	I.		15		3977·891	,,	,,	25131·8
Ca*	5	3	M.	1	2	3973·881	3973·835	1·09	,,	25157·5b
Fe	5	4	II.		11		3971·478	,,	,,	25172·4
H			M.			3970·05		,,	,,	25181·5
[H] Ca†	70r	200	M.	7	5	3968·617	3968·620	,,	,,	25190·6a
Al	30r	15	M. IV.	7	8	3961·680	3961·676	,,	,,	25234·7b
Fe	3	3	I.		11		3960·429	,,	,,	25242·7
Fe-Ca	5, 6	6	II.	1	2	3957·228	3957·180	,,	,,	25263·4b
Fe	2	2	II.		13		3954·001	,,	7·2	25283·6
Yt	10	2	III.		13		3950·497	,,	,,	25306·1
Fe	4	4	I.		15		3950·101	,,	,,	25308·6
Ca	4	2	M.	1	2	3949·070	3949·034	,,	,,	25315·4b
Al‡	20r	10	M. IV.	7	7	3944·165	3944·159	,,	,,	25346·7b
Fe ?	5 ?	4 2	III.		15		3942·559	,,	,,	25357·0
Fe-Co	4, 4	5	III.	1	15	3941·034	3941·021	,,	,,	25366·9b
Fe	3	4	II.		8		3937·474	,,	,,	25389·8
[K] Ca†	75r	300	M.	6	5	3933·809	3933·809	1·08	,,	25413·4
Fe	10r	8	M.	1	3	3928·060	3928·071	,,	,,	25450·6b
? Fe	? 5	4 4	II.		12		3926·123	,,	,,	25463·2
Fe	3	4	III.		13		3925·792	,,	,,	25465·4
Va Fe	2 1	4	II.		15		3925·345	,,	,,	25468·3
Ti	6	4	II.		15		3924·669	,,	,,	25472·7
Fe	3	3	II.	1	12	3916·886	3916·875	,,	7	25523·4b
Si	10r	10	M.	4	4	3905·670	3905·666	,,	7·3	25596·5b
Fe	3	4	II.		12		3897·599	,,	,,	25649·5
Fe	15r	9	M. IV.	7	6	3886·421	3886·427	1·07	,,	25723·3a
Cr		1	III.		12		3883·773	,,	,,	25740·9
C§			M. IV.		8	3883·523	3883·548	,,	,,	25742·3b
C‖		7	M. IV.	5	3	3883·479	3883·472	,,	,,	25742·8a
Va ?		3	III.		15		3875·224	,,	,,	25797·7
C¶		4	M.	4	4	3871·527	3871·528	,,	,,	25822·3b
C**		3	II.		8		3864·441	,,	,,	25869·7
Fe	10r	10	M. IV.	2	3	3860·050	3860·048	,,	,,	25899·1b
Fe	6	7	M.	1	2		3856·517	1·06	,,	25922·8
Fe	4	5	III.		8		3843·406	,,	,,	26011·3
Fe	7r	7	M.	1	2	3840·589	3840·584	,,	,,	26030·4b
Mg	40r	20	M.		2		3838·430	,,	,,	26045·0

* Red component of double; the violet component is due to Fe.
† Solar line doubly reversed. ‡ Red component of triplet.
§ Edge of first head of cyanogen band (*i*). ‖ First line of first head of cyanogen band (*i*). ¶ Second head of cyanogen band (*i*). ** One of the lines in cyanogen band.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	$\lambda +$	$\frac{1}{\lambda} -$	
C* . .		5	M. IV.	1	1	3836·638	3836·652	1·06	7·3	26057·1*b*
?-C . .		4	III.		8		3836·226	,,	,,	26060·0
Mg . .	30r	10	M.		2		3832·446	,,	,,	26085·7
Mg . .	20r	8	M.		2		3829·505	,,	,,	26105·7
Fe . .	8r	8	M.	1	1	3827·973	3827·973	,,	,,	26116·2
Fe . .	20r	20	M. III.	4	4	3826·024	3826·024	,,	,,	26129·4
Mn (Cr) .	5, 1r	5	II.		10		3823·651	,,	,,	26145·7
Fe . .	5	6	II.		10		3821·318	,,	,,	26161·7
Fe . .	30r	30	M. III.	4	4	3820·566	3820·567	,,	,,	26166·8*b*
Fe . .	20r	20	M. III.	4	3	3815·984	3815·985	1·05	7·4	26198·2*a*
Fe-Di .	4, ?	6	I.		15		3805·487	,,	,,	26270·4
Fe . .	2	3	I.		15		3804·153	,,	,,	26279·7
Fe . .	8	8	III.		2		3799·698	,,	,,	26310·5
Fe . .	7	7	III.		2		3798·662	,,	,,	26317·7
Fe . .	8	8	M .	3	4	3795·148	3795·150	,,	,,	26342·0*b*
Fe-Cr .	1, 1	3	III.		15		3794·014	,,	,,	26349·9
Fe . .	7r	8	M. III.	3	3	3788·029	3788·032	,,	,,	26391·5*b*
Ni . .	10r	6	III.		15		3783·674	,,	,,	26421·9
Fe . .	2	3	II.		15		3781·330	,,	,,	26438·3
? . .		4	II.		15		3780·846	,,	,,	26441·7
Th . .	40r		M.	1		3775·869		1·04	,,	26476·6
Yt ? . .	6	3	M. III.	1	1	3774·478	3774·480	,,	,,	26486·3*b*
Fe . .	3	4	III.		12		3770·130	,,	7·5	26516·8
Fe . .	7r	8	M. III.	9	8	3767·342	3767·344	,,	,,	26536·4*a*
Fe . .	9r	10	M.	9	8	3763·939	3763·942	,,	,,	26560·4*a*
Fe . .	15r	15	M. III.	8	7	3758·380	3758·379	,,	,,	26599·7*a*
Fe . .	2	2	II.		12		3756·211	,,	,,	26615·1
? } .		1	} III.		12		3754·664	,,	,,	26626·0
? } .		2								
Fe . .	20r	20	M. III.	7	8	3749·633	3749·633	,,	,,	26661·8
Fe . .	10r	10	M. III.	7	8	3748·410	3748·409	,,	,,	26670·5*b*
? } .	?	} 7	II.	1	9	3747·082	3747·095	,,	,,	26679·8*b*
Fe } .	3									
Fe . .	7r	7	M.	6	5	3746·048	3746·054	,,	,,	26687·3*a*
Fe . .	10	10	M.	8	6	3745·708	3745·701	,,	,,	26689·7*a*
Cr } .	3	2	} M. III.	4	2	3743·506	3743·502	,,	,,	26705·4*a*
Fe } † .	5	6								
Ti } .	3	2								
Fe . .	25r	30	M. III.	7	8	3737·280	3737·282	1·03	,, 7	26749·9*b*
Ca . .	4r		M. IV.	2	3	3737·081	3737·075	,,	,,	26751·4*b*
Mn } .	2	5	} IV.		2		3736·969	,,	,,	26752·2
Ni } .	6	3								
Fe . .	40r	50	M. III.	8	7	3735·012	3735·014	,,	,,	26766·1*a*
Fe . .	6r	7	M. III.	5	3	3733·467	3733·467	,,	,,	26777·3
Fe . .	5	5	I.	1	15	3732·549	3732·542	,,	,,	26783·9*b*
Fe . .	6r	7	M.	5	3	3727·768	3727·763	,,	7·6	26818·1*a*
Fe-Ti } † .	8, 5	} 10	M. III.	7	5	3722·712	3722·691	,,	,,	26854·5*a*
Ni . } .	4									
Fe . .	40r	50	M. III.	11	10	3720·082	3720·086	,,	,,	26873·5*a*
Fe . .	4	7	I.	1	12	3716·601	3716·585	,,	,,	26898·8*b*
Yt . .	10r	3	M. III.	1	1	3710·442	3710·438	,,	,,	26943·4*b*

* Central line of symmetrical group. † Iron line measured.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ +	$\frac{1}{\lambda}$ −	
Fe . .	10r	10	M. IV.	6	4	3709·395	3709·397	1·03	7·6	26951·0*a*
Fe . .	5	5	I.	1	11	3707·201	3707·186	,,	,,	26967·0*b*
Fe* . .	7r	8	M. III.	7	5	3705·715	3705·711	,,	,,	26977·7*a*
Fe . .	5	5	I.	1	11	3695·208	3695·194	1·02	,,	27054·6*b*
Yt . .		3	M. III.	1	1	3694·351	3694·349	,,	,,	27060·8*b*
Fe . .	10r	8	M. III.	8	6	3687·609	3687·607	,,	,,	27110·2*a*
Fe . .	5	6	I.	1	14	3684·268	3684·259	,,	,,	27134·9*b*
Pb . .	60r	1	M.	5		3683·622		,,	7·7	27139·5
Va } .	4									
Fe } † .	3	6	I.	1	13	3683·209	3683·202	,,	,,	27142·6*b*
Co } .	9									
Fe . .	8r	8	M. III.	8	7	3680·064	3680·064	,,	,,	27165·7
Fe . .		3	I.		13		3667·397	,,	,,	27259·6
Fe } .	2	2	I.		7		3658·688	,,	,,	27324·5
Mn } .	2									
Ti . .	10r	4	M. II.	2	7	3653·639	3653·639	1·01	,,	27362·3
Co . .	5	3	I.		5		3652·692	,,	,,	27369·4
Fe . .	10r	10	M. III.	10	11	3647·995	3647·995	,,	,,	27404·6
Fe } † .	5	5	M. I.	1	14	3640·545	3640·536	,,	,,	27460·8*b*
Cr } .	2									
Pb‡ . .	50r	1	M.	4		3639·728		,,	,,	27466·9
Fe . .	5	5	M. IV.	1	1	3638·454	3638·435	,,	7·8	27476·6*b*
Ti . .	10r	3	M. II.	3	1	3635·615	3635·616	,,	,,	27497·9*a*
Yt‡ . .	5	3	M.	1	1	3633·277	3633·259	,,	,,	27515·7*b*
Fe . .	20r	20	M. IV.	11	10	3631·616	3631·619	,,	,,	27528.2*a*
Yt . .	3	2	M. III.	1	1	3628·853	3628·853	,,	,,	27549·1
Fe . .	2	3	I.		10		3623·603	,,	,,	27589·1
Fe . .	4	4	M. I.	1	14	3623·338	3623·332	,,	,,	27591·1*b*
Fe . .	4	4	M. IV.	2	3	3622·161	3622·147	,,	,,	27600·1*b*
Fe .	4	4	M. III.	2	2	3621·616	3621·606	,,	,,	27604·3*b*
Yt . .	3	1	M.	1	1	3621·096	3621·122	,,	,,	27608·0*b*
Fe . .	20r	20	M. IV.	11	10	3618·922	3618·924	,,	,,	27624·7*a*
Fe } † .	4	3	M. IV.	1	1	3617·939	3617·920	1·00	,,	27632·4*b*
Ca } .		2								
Fe . .	4	4	IV.	1	15	3612·237	3612·217	,,	,,	27676·0*b*
Yt . .	7	3	M. III.	1	1	3611·196	3611·193	,,	,,	27683·9*b*
Fe . .	15r	15	M. III.	11	10	3609·015	3609·015	,,	,,	27700·6
Fe§ . .	4	6	M.	2	2	3606·836	3606·831	,,	,,	27717·4*b*
Fe . .	5	7	M. IV.	2	2	3605·621	3605·635	,,	,,	27726·6*b*
Cr . .	10r	4	M. IV.	1	2	3605·497	3605·483	,	,,	27727·7*b*
Yt . .	6	2	M. III.	1	1	3602·065	3602·061	,,	,,	27754·1*b*
Yt (Fe) .	10?	4	M. I.	1	1	3600·884	3600·880	,,	,,	27763·2*b*
Fe . .	5	4	I.		12		3597·192	,,	,,	27791·7
C‖ . .		3	M.	7		3590·523		,,	7·9	27843·2
C . .		2	M.	2		3586·041		,,	,,	27878·0
C¶ . .	2	1	M.	8		3585·992		,,	,,	27878·4
Yt . .	6	2	M.	1	1	3584·662	3584·662	,,	,,	27888·7

* Violet component of double. † Iron line measured.

‡ Red component of double.

§ The solar line is a group of four; the second from the red is the brightest, and due to Fe.

‖ First line in first head of cyanogen band.

¶ First line in second head of cyanogen band.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character: In Arc	Intensity and Character: In Sun	Kind of Standard	Weight: In Arc	Weight: In Sun	Wave-lengths: In Arc (a)	Wave-lengths: In Sun (b)	Reduction to Vacuo: λ+	Reduction to Vacuo: $\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo
Fe ? . .	2	4	I.		12		3583·483	1·00	7·9	27897·9
Fe . .	30r	40	M. IV.	9	6	3581·344	3581·344	„	„	27914·6
Fe . .	10	10	M.	1	1	3570·412	3570·402	0·99	„	28000·2*b*
Fe* . .	20r	20	M.	8	4	3570·253	3570·225	„	„	28001·3*a*
Fe . .	10r	12	M.	6	4	3565·530	3565·528	„	„	28038·4*a*
Fe } .	1	4	I.		12		3564·680	„	„	28045·1
Ti } .	2									
Fe . .	9r	8	M. III.	3	4	3558·674	3558·670	„	„	28092·5*b*
Fe . .	2	3	I.		7		3550·006	„	8·0	28161·0
Yt . .	6	2	M. I.	1	1	3549·147	3549·145	„	„	28167·8*b*
? . .		4	I.		6		3545·333	„	„	28198·1
Fe . .	3	5	I.		10		3540·266	„	„	28238·5
Th . .	20r		M.	1		3529·547		0·98	„	28324·3
Fe . .	5r	7	M.	6	5	3521·409	3521·404	„	„	28389·7*a*
Th . .	40r		M.	1		3519·342		„	„	28406·4
Co . .	6r	5	I.		10		3518·487	„	„	28413·3
Fe† . .	7r	6	M.	2	3	3513·981	3513·947	„	„	28450·0*b*
Ti . .	5	4	II.		8		3510·987	„	„	28474·0
Ni . .	7r	7	I.		4		3500·993	„	8·1	28555·2
Fe . .	2	3	I.		4		3500·721	„	„	28557·5
? } † .		3	M.	5	4	3497·991	3497·991	0·97	„	28579·7
Fe } .	6r	7								
Fe* . .	5	5	M.	1	1	3497·266	3497·264	„	„	28585·7*b*
? } .	?	4	I.		8		3491·464	„	„	28633·2
Co } .	4r									
Fe . .	10r	10	M.	7	3	3420·724	3490·721	„	„	28639·3*a*
Ni . .	4r	5	II.		9		3486·036	„	„	28677·8
Ni } .	2	4	I.		10		3478·001	„	„	28744·1
Fe } .	3									
Co } .	2									
Fe‡ . .	7r	8	M.	5	2	3476·848	3476·831	„	„	28753·6*a*
Fe‡ . .	10r	10	M.	7	3	3475·602	3475·594	„	„	28763·9*a*
Fe } § .	10r	6	M.	7	3	3466·010	3465·991	„	8·2	28843·4*a*
Co } .	10r	4								
Sr ? . .	8	3	I.		8		3464·609	„	„	28855·1
Co . .	6r	4	I.		10		3455·384	0·96	„	28932·1
Fe . .	8r	8	M. IV.	6	4	3444·024	3444·032	„	„	29027·6*a*
Fe . .	10	10	M. IV.	6	4	3441·135	3441·135	„	„	29052·0
Fe . .	15r	15	M. IV.	7	4	3440·756	3440·759	„	„	29055·2*a*
Fe* . .	6	5	M.	2	1	3427·279	3427·282	„	8·3	29169·4*a*
? . .		2	I.		15		3425·721	„	„	29182·6
Fe . .	5	4	II.	1	18	3406·965	3406·955	0·95	„	29343·4*b*
Fe . .	2	1	II.	1	18	3406·602	3406·581	„	„	29346·6*b*
Ti } .	1	3	II.	1	12	3405·255	3405·272	„	„	29357·9*b*
Co } .	10r	3								
Fe . .	2	2	I.	1	12	3389·913	3389·887	„	8 4	29491·1*b*
Ti } . .	5	3	I.		9		3377·667	0·94	„	29597·8
Ti } . .	5	3								
Zr . .	4	1	I.		8		3356·222	„	8·5	29786·9
Fe . .	2	2	II.		9		3351·877	„	„	29825·5
Fe } .	3	3	II.		9		3348·011	„	„	29860·0
Cr } . .	3	3								

* Red component of double. † Violet component of double.

‡ Strongest line of a group of six. § Iron line measured.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	$\frac{1}{\lambda}$−	
Fe . .	2	2	II.		8		3331·741	0·93	8·5	30005·8
Ti . .	5	5	I.		10		3318·163	,,	8·6	30128·6
Co-Ti } .	3, 6	4	} I.		10		3308·928	,,	,,	30212·7
Mn } .	2	1								
Fe* . .	10	7	M. IV.	1	5	3306·481	3306·471	,,	,,	30235·1*b*
Fe† . .	10	7	M. IV.	1	5	3306·119	3306·117	,,	,,	30238·4*b*
Fe } .		3	} II.		10		3303·648	,,	,,	30261·0
? } .		3								
Na } .	10r	5	M. IV.	1	6	3303·119	3303·107	,,	,,	30265·9*d*
Na } .	15r	6	M. I.	1	6	3302·504	3302·501	,,	,,	30271·5*b*
Mn-Di .	3, 2	4	I.		9		3295·957	0·92	,,	30331·6
Co-Ti } .	4, 7	} 5	I.		10		3292·174	,,	,,	30366·5
Fe } .	5									
Ti . .	6	5	I.		9		3287·791	,,	8·7	30406·9
Cu . .	30r	6	M. I.	15	5	3274·090	3274·092	,,	,,	30534·1*a*
Va . .	10	4	I.		10		3267·839	,,	,,	30592·6
Fe } .	1	} 4	II.		10		3260·384	,,	,,	30662·5
Ti } .	3									
Mn } .	4									
Cu . .	40r	9	M. IV.	15	5	3247·671	3247·680	0·91	8·8	30782·5*a*
Fe } .		6	I.		12		3246·124	,,	,,	30797·2
? } .										
Ti . .	10r	8	M.	1	1	3236·696	3236·697	,,	,,	30886·9*b*
Ti . .	6	4	III.		12		3232·404	,,	,,	30927·9
? } . .	?	} 5	I.		1		3231·421	,,	,,	30937·3
Ti } . .	5									
Fe . .	8	8	M.	3	1	3225·907	3225·923	,,	,,	30990·2*a*
Ti . .	6	4	I.		3		3224·368	,,	,,	31005·2
? } .	?	7	} M. III.	3	1	3222·197	3222·203	,,	,,	31025·9*a*
Fe ? } .	6	5								
Fe . .		6	} II.		1		3219·909	0·90	,,	31048·0
Fe . .		6	} II.		1		3219·697	,,	,,	31050·0
Ti . .	4	3	I.		6		3218·390	,,	,,	31062·6
Fe . .	5	5	M.	1		3214·152		,,	8·9	31103·5
Ti . .	10r	4	M. I.	1	5	3200·040	3200·032	,,	,,	31240·8*b*
Ni . .	3	3	M.	1	1	3195·729	3195·702	,,	,,	31283·1*b*
Cr ? . .	4	4	II.		5		3188·164	,,	,,	31357·1
La ? . .	1	1	II.		5		3176·104	0·89	9·0	31476·1
Fe ? . .		5	I.		1		3172·175	,,	,,	31515·1
Mn . .		1	II.		5		3167·290	,,	,,	31563·7
Ca . .		8	M.	1	1	3158·994	3158·988	,,	,,	31646·7*b*
Fe . .		2	II.		3		3153·870	,,	,,	31698·1
Fe . .		3	II.		5		3140·869	0·88	9·1	31829·2
Co . .	4	2	II.		3		3137·441	,,	,,	31864·0
Ni . .	10r	8	M.	1		3134·223		,,	,,	31896·7
Zr . .	3	1	II.		5		3129·882	,,	,,	31941·0
Va . .	7	5	I.		9		3121·275	,,	,,	32029·1
Fe . .		2	I.		3		3115·160	,,	,,	32092·0
Cr ? . .		3	II.		1		3109·434	,,	9·2	32151·0
- .		2	III.		1		3106·677	,,	,,	32180·5
Ni . .	10r	6	M.	3		3101·994		0·87	,,	32228·1

* Second line from violet side of a group of four.
† Second line from red side of a group of five.

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	$\frac{1}{\lambda}$−	
Ni . .	20r	8	M.	3		3101·673		0·87	9·2	32231·5
Fe . .	6	6	M.	3		3100·779		,,	,,	32240·8
Fe (Mn) .	4?	4	M.	3		3100·415		,,	,,	32244·5
Fe . .	4	7	M.	3		3100·064		,,	,,	32248·2
Fe . .	1	3	II.		9		3095·003	,,	,,	32300·9
? . .		2	II.		9		3094·739	,,	,,	32303·7
Al . .	4	2	M.	8		3092·962		,,	,,	32322·3
Al . .	20r	10	M.	15		3092·824		,,	,,	32323·7
Ti . .	8r	8	M.	1		3088·137		,,	,,	32372·8
? . .		4	I.		1		3086·891	,,	,,	32385·9
Fe . .	6r	7	M.	5		3083·849		,,	9·3	32417·7
Al . .	20r	7	M.	17		3082·272		,,	,,	32434·3
? . .		5	I.		1		3080·863	,,	,,	32449·1
Mn . .	7	2	I.		1		3079·724	,,	,,	32461·1
Ti . .	4	6	M.	3		3078·759		,,	,,	32471·3
Fe ? . .		4	I.		6		3078·148	,,	,,	32477·8
? . .		4	III.		6		3077·303	,,	,,	32486·7
Fe . .		2	M.	1		3077·216		,,	,,	32487·6
Fe . .	10r	10	M.	4		3075·849		,,	,,	32502·0
Ti . .	6	8	M.	3		3075·339		,,	,,	32507·4
Fe . .	10r	10	M.	10		3067·363		,,	,,	32592·0
Co . .	8r	3	M. I.	1	5	3061·932	3061·930	0·86	,,	32649·8*b*
? . .		3	II.		1		3061·098	,,	,,	32658·7
Fe . .	10r	10	M.	15		3059·200		,,	,,	32679·0
Fe . .	10r	10	M.	8		3057·557		,,	,,	32696·6
? . .		5	I.		5		3055·821	,,	,,	32715·1
? . .		3 3	II.		1		3053·527	,,	9·4	32739·6
Fe . .		3	II.		5		3053·173	,,	,,	32743·4
? . .		3 3	I.		5		3050·212	,,	,,	32775·2
Fe . .	20r	20	M.	13		3047·720		,,	,,	32802·0
? . .			II.	1			3046·778	,,	,,	32812·2
Mn . .	10r	3	II.	5			3044·683	,,	,,	32834·7
Ca . .	15r	4	M. IV.	3	2	3044·114	3044·119	,,	,,	32840·9*a*
Fe . .	15r	15	M.	10	2	3037·505	3037·492	,,	,,	32912·4*a*
? . .		5	III.	7			3035·850	,,	,,	32930·3
Fe . .			M.	1		3027·245		,,	,,	33023·9
Fe . .	10r	10	M.	7		3025·958		,,	,,	33038·0
? . .		4	II.		7		3025·394	,,	,,	33044·1
? . .		5	II.		7		3024·475	,,	9·5	33054·1
Fe . .	7r	7	M.	7		3024·154		,,	,,	33057·6
Fe . .	15r		M.	18		3021·191		0·85	,,	33090·0
Fe . .	25r		M.	18		3020·759		,,	,,	33094·8
Fe . .	10r		M.	15		3020·611		,,	,,	33096·4
Fe . .			M.	1		3019·752		,,	,,	33105·8
Fe . .	5		M.	1		3019·109		,,	,,	33112·9
Fe . .	5		M.	1		3017·747		,,	,,	33127·8
Fe . .		3	M.	1		3016·296		,,	,,	33143·7
? . .		6	IV.	4			3014·274	,,	,,	33166·0
? . .		4	IV.	5			3012·557	,,	,,	33184·9
Fe . .	4r		M.	3		3009·696		,,	,,	33216·4
Ca . .	7r		M.	3		3009·327		,,	,,	33220·5
Fe . .	6r		M.	15		3008·255		,,	,,	33232·4

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ +	$\frac{1}{\lambda}$ −	
Fe . .	1		M.	3		3007·408		0·85	9·5	33241·7
Fe . .	2		M.	1		3007·260		,,	,,	33243·4
Ca . .	15r		M.	3		3006·978		,,	,,	33246·5
? . .		4	III.	1			3005·404	,,	,,	33263·9
? . .		3	III.	1			3005·160	,,	,,	33266·6
Fe . .	8r		M.	15		3001·070		,,	,,	33312·0
Ca . .	8r		M.	3		3000·976		,,	,,	33313·0
Ca . .	6r		M.	3		2999·767		,,	,,	33326·4
Fe . .	4r		M.	5		2999·632		,,	,,	33327·9
Ca . .	10r		M.	3		2997·430		,,	9·6	33352·3
Ca . .	7r		M.	3		2995·074		,,	,,	33378·6
Fe . .	8r		M.	18		2994·547		,,	,,	33384·4
Si . .	4		M.	5		2987·766		,,	,,	33460·2
Fe . .			M.	1		2987·410		,,	,,	33464·2
Fe . .	10r		M.	15		2983·689		,,	,,	33506·0
Fe . .	2		M.	6		2981·570		0·84	,,	33529·8
Fe . .	12r		M.	15		2973·358		,,	,,	33622·4
Fe . .	6r		M.	7		2973·254		,,	,,	33623·6
Fe . .	4r		M.	7		2970·223		,,	9·7	33657·8
Fe . .	8r		M.	12		2967·016		,,	,,	33694·2
Fe . .			M.	1		2966·985		,,	,,	33694·6
Fe . .	5		M.	3		2965·381		,,	,,	33712·8
Fe . .	5		M.	3		2957·485		,,	,,	33802·8
Fe . .	7r		M.	4		2954·058		,,	,,	33842·0
Fe . .	8r		M.	4		2947·993		,,	,,	33911·7
Fe . .	10r		M.	4		2937·020		0·83	9·8	34038·3
Fe . .	8r		M.	3		2929·127		,,	,,	34130·1
Fe . .	7r		M.	3		2912·275		,,	9·9	34327·5
Si . .	15		M.	12		2881·695		0·82	10·0	34691·8
Mg . .	100r		M.	15		2852·239		0·81	10·1	35050·1
Fe . .	6		M.	5		2851·904		,,	,,	35054·2
Fe . .	5		M.	7		2844·085		,,	10·2	35150·5
Fe . .	3		M.	1		2843·744		,,	,,	35154·7
Fe . .	3		M.	1		2838·226		,,	,,	35223·1
Fe . .	4		M.	7		2832·545		,,	,,	35293·7
Fe . .	5		M.	1		2825·667		,,	,,	35379·7
Fe . .	3		M.	1		2823·389		0·80	10·3	35408·1
Fe . .	5		M.	3		2813·388		,,	,,	35534·0
Mg . .	20r		M.	10		2802·805		,,	,,	35668·2
Mn . .			M.	3		2801·183		,,	,,	35688·9
Mn . .			M.	3		2798·369		,,	10·4	35724·7
Mg . .	20r		M.	12		2795·632		,,	,,	35759·7
Mn . .			M.	3		2794·911		,,	,,	35768·9
Fe . .			M.	3		2788·201		,,	,,	35855·0
Mg*. .	5r		M.	5		2783·077		0·79	,,	35921·1
Fe . .			M.	1		2781·945		,,	,,	35935·7
Mg*. .	5r		M.	5		2781·521		,,	,,	35941·2
Mg*. .	8r		M.	5		2779·935		,,	,,	35961·7
Mg*. .	5r		M.	3		2778·381		,,	,,	35981·8
Fe . .			M.	2		2778·340		,,	,,	35982·3
Mg*. .	5r		M.	5		2776·798		,,	,,	36002·3
Fe . .			M.	2		2772·206		,,	10·5	36061·9

* A remarkable symmetrical group of five Mg lines

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	λ+	1/λ −	
Fe . .			M.	2		2767·630		0·79	10·5	36121·5
Fe . .			M.	2		2762·110		,,	,,	36193·7
Fe . .			M.	2		2761·876		,,	,,	36196·8
Fe . .			M.	3		2756·427		,,	,,	36268·4
Fe . .			M.	2		2755·837		,,	,,	36276·1
Fe . .			M.	3		2750·237		,,	10·6	36349·9
Fe . .			M.	3		2742·485		,,	,,	36452·7
Fe ? . .			M.	3		2737·405		0·78	,,	36520·3
Fe ? . .			M.	3		2733·673		,,	,,	36570·2
Fe . .			M.	3		2723·668		,,	10·7	36704·5
Ca . .	5		M.	1		2721·762		,,	,,	36730·2
Fe . .			M.	3		2720·989		,,	,,	36740·6
Fe . .			M.	3		2719·119		,,	,,	36765·9
Fe . .			M.	2		2706·684		,,	,,	36934·9
Fe . .			M.	3		2679·148		0·77	10·9	37314·4
Si . .	5		M.	7		2631·392		0·76	11·1	37991·6
Fe . .			M.	3		2631·125		,,	,,	37995·5
Fe . .			M.	2		2611·965		,,	,,	38274·3
Fe . .	r		M.	3		2599·494		0·75	11·2	38457·8
Fe . .			M.	2		2598·460		,,	,,	38473·1
Mn . .			M.	2		2593·810		,,	,,	38542·1
Fe . .			M.	2		2585·963		,,	11·3	38659·0
Fe ? . .			M.	2		2584·629		,,	,,	38679·0
Mn . .			M.	2		2576·195		,,	,,	38805·6
Al . .	10		M.	5		2575·198		,,	,,	38820·7
Al . .	10		M.	5		2568·085		,,	11·4	38928·1
Fe . .			M.	2		2549·704		0·74	,,	39208·8
Fe . .			M.	3		2546·068		,,	11·5	39264·8
Fe . .			M.	3		2541·058		,,	,,	39342·2
Hg . .	50r		M.	2		2536·648		,,	,,	39410·6
Fe . .			M.	3		2535·699		,,	,,	39425·4
Si . .	10		M.	5		2528·599		,,	11·6	39536·0
Fe . .			M.	3		2527·530		,,	,,	39552·7
Si . .	9		M.	10		2524·206		,,	,,	39604·8
Fe . .			M.	3		2522·948		,,	,,	39624·6
Si . .	8		M.	10		2519·297		,,	,,	39682·0
Fe . .			M.	3		2518·188		,,	,,	39699·5
Si . .	15		M.	7		2516·210		0·73	,,	39730·7
Si . .	7		M.	10		2514·417		,,	,,	39759·1
Fe . .			M.	3		2510·934		,,	11·7	39814·1
Si . .	10		M.	15		2506·994		,,	,,	39876·7
Fe . .			M.	3		2501·223		,,	,,	39968·7
Bo . .	20		M.	20		2497·821		,,	,,	40023·2
Bo . .	15		M.	20		2496·867		,,	,,	40038·5
Fe . .			M.	3		2491·244		,,	11·8	40128·8
Fe . .			M.	3		2490·723		,,	,,	40137·2
Fe . .			M.	3		2489·838		,,	,,	40151·5
Fe . .			M.	3		2488·238		,,	,,	40176·3
Fe . .			M.	3		2484·283		,,	,,	40241·3
Fe . .			M.	3		2483·359		,,	,,	40256·2
Fe . .			M.	3		2479·871		,,	,,	40312·9
C . .	10		M.	15		2478·661		,,	,,	40332·6
Fe . .			M.	3		2472·974		,,	11·9	40425·2
Fe . .			M.	3		2462·743		0·72	,,	40593·2

TABLE OF STANDARD WAVE-LENGTHS—*continued.*

Element	Intensity and Character		Kind of Standard	Weight		Wave-lengths		Reduction to Vacuo		Oscillation Frequency in Vacuo
	In Arc	In Sun		In Arc	In Sun	In Arc (a)	In Sun (b)	$\lambda+$	$\frac{1}{\lambda}-$	
Fe . .			M.	3		2457·680		0·72	12·0	40676·8
Si . .	3		M.	10		2452·219		„	„	40767·4
Fe ? . .			M.	3		2447·785		„	„	40841·3
Si . .	3		M.	10		2443·460		„	12·1	40913·5
Si . .	3		M.	10		2438·864		„	„	40990·6
Si . .	8		M.	15		2435·247		„	„	41051·5
Fe . .			M.	2		2410·604		0·71	12·3	41471·1
Fe . .			M.	2		2406·743		„	„	41537·6
Fe . .			M.	2		2404·971		„	„	41568·2
Fe . .			M.	2		2399·328		„	„	41666·0
Ca . .	25r		M.	5		2398·667		„	„	41677·5
Fe ? . .			M.	3		2395·715		„	12·4	41728·8
Fe . .			M.	2		2388·710		„	„	41851·2
Fe ? . .			M.	3		2382·122		„	12·5	41966·9
Fe . .			M.	2		2373·771		0·70	„	42114·6
Al . .	7		M.	3		2373·213		„	„	42124·5
Al . .	6		M.	3		2367·144		„	12·6	42232·4
Fe . .			M.	2		2364·897		„	„	42272·5
Fe . .			M.	2		2348·385		„	12·7	42569·8
Fe . .			M.	2		2343·571		„	„	42656·4
Ba . .	20r		M.	1		2335·267		„	12·8	42808·9
Ba . .	20r		M.	1		2304·364		0·69	13·0	43382·9
Fe ? . .			M.	2		2298·246		„	13·1	43498·3
Ca . .	20r		M.	3		2275·602		0·68	13·3	43931·1
Sr . .	10r		M.	1		2275·376		„	„	43935·5
Al . .	4		M.	2		2269·161		„	„	44055·8
Al . .	3		M.	2		2263·507		„	„	44165·9
Si . .	2		M.	2		2218·146		0·67	13·7	45069·0
Si . .	4		M.	2		2216·760		„	„	45097·2
Si . .	2		M.	2		2211·759		„	13·8	45199·1
Si . .	3		M.	2		2210·939		„	„	45215·8
Si . .	2		M.	2		2208·060		„	„	45274·8
Sr . .	3		M.	1		2165·990		0·66	14·2	46154·1
Sr . .	2		M.	1		2152·912		„	14·3	46434·4

EXPLANATORY NOTE.—The first column gives the symbol of the element whose wave-length has been measured, *e.g.* O signifies oxygen, wv water-vapour, &c. If a letter stands at the left within brackets: thus, [A] [C], it is the 'name' of the line in the solar spectrum. A mark of interrogation after the symbol means that it is doubtful if the line is really due to that element. Two symbols on the same line (*e.g.* Mn Di, 3295·957) signify that these two elements have apparently coincident lines as their wave-length. Two or more symbols bracketed (*e.g.* $\left.\begin{matrix}\text{Mn}\\\text{Si}\\\text{Fe}\end{matrix}\right\}$ 3260·384) mean that the first has a line coinciding with one side of the corresponding solar line, the second with the middle, &c. A mark of interrogation alone signifies that the chemical origin of the line is unknown. The fifth and sixth columns give the 'weights' to be attached to the lines as standards in the arc and solar spectrum respectively. The fourth column gives the character of the standard. M. means a standard in the arc spectrum; I. a remarkably good standard in the solar spectrum; II. a good solar standard; III. an ordinary solar standard; and IV. a rather poor solar standard. Columns 7 and 8 give the wave-lengths in air at about 20° C. and 760 mm. Lines marked with two dashes are double: thus 6″. r signifies reversed.

Sodium (Spark Spectrum).

Eder and Valenta: 'Denkschr., Wien,' Bd. lxi. 1894.

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
†6161·2	8s	1·68	4·4	16226·2	3284·9	2s	0·92	8·7	30433·6
†6154·6	8s	1·67	„	16243·6	3280·8	2s	„	„	30471·7
*†5896·2	10s	1·61	4·6	16955·5	3212·1	2s	0·90	8·9	31123·4
*†5890·2	10s	1·60	„	16972·8	3093·1	6s	0·87	9·2	32320·8
†5688·3	6bv	1·55	4·8	17575·1	3078·5	3s	„	9·3	32474·1
†5682·9	6s	„	„	17591·8	3075·9	1n	„	„	32501·5
†5675·9	1n	„	„	17613·6	3069·5	1n	„	„	32569·3
†5670·4	1n	„	„	17630·6	3056·4	3s	0·86	„	32708·9
†5153·7	5s	1·41	5·3	19398·2	3054·2	2s	„	9·4	32732·4
†5149·2	5s	„	„	19415·2	3037·2	1n	„	„	32915·7
†4983·5	6s	1·36	5·5	20060·7	2984·3	2s	0·85	9·6	33499·1
†4979·3	6s	„	„	20077·6	2980·4	2s	0·84	„	33542·9
†4752·2	2s	1·30	5·8	21037·1	2975·5	2s	„	„	33598·2
†4748·4	2s	„	„	21053·9	2951·4	2s	„	9·7	33872·5
†4669·4	3bv	1·28	5·9	21410·1	2921·4	1n	0·83	9·9	34220·3
†4665·2	3s	„	„	21429·4	2919·0	1n	„	„	34248·4
4581·7	1	1·26	6·0	21820·0	2906·0	3s	„	„	34401·7
4573·6	1	1·25	„	21858·6	2903·0	1n	0·82	„	34437·2
4570·4	1	„	„	21873·9	*†2852·9	10s	0·81	10·1	35041·9
4565·2	1	„	„	21898·9	2841·8	2s	„	10·2	35178·8
4555·7		„	6·1	21944·4	2809·0	3s	0·80	10·3	35589·6
†4546·0	2s	„	„	21991·3	†2680·5	8s	0·77	10·8	37295·7
†4542·8	2s	1·24	„	22006·8	2672·2	1n	„	10·9	37411·5
4539·0	1	„	„	22025·2	2661·9	1n	„	„	37556·3
†4500·0	3n	1·23	„	22216·1	2612·5	2s	0·76	11·1	38266·4
†4494·3	3n	„	6·2	22244·2	†2594·0	3s	0·75	11·2	38539·3
†4393·7	1n	1·20	6·3	22753·6	†2543·9	1s	0·74	11·5	39298·2
†4390·7	1n	„	„	22769·1	†2512·2	1s	0·73	11·6	39794·2
3533·8	2s	0·98	8·0	28290·2	2502·1	1s	„	11·7	39954·7
†3303·1	10s	0·93	8·6	30266·0	2493·4	4s	„	11·8	40094·1
*†3302·5	10s	„	„	30271·5	2138·4	1v	0·66	14·4	46749·5

Potassium (Spark Spectrum).

Eder and Valenta: 'Denkschr., Wien,' Bd. lxi. 1894.

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*†7699·3	8s	2·08	3·5	12984·7	*†5782·7	3s	1·58	4·9	17288·3
*†7665·6	8s	„	„	13041·8	†5359·9	8s	1·46	5·1	18652·0
†6938·8	8s	1·88	3·9	14407·8	*†5343·4	1n	„	„	18709·6
†6911·2	7s	1·87	„	14465·4	†5340·1	8s	„	„	18721·1
*†5832·2	3s	1·59	4·7	17141·5	†5323·6	2s	1·45	„	18779·2
†5812·5	3s	1·58	„	17199·6	†5112·7	2s	1·40	5·4	19553·7
*†5802·0	4s	„	„	17230·7	*†5099·3	2s	1·39	„	19605·1

* Occurs also in the Flame Spectrum. See Report, 1894.
† Occurs also in the Arc Spectrum. See Report, 1892.

POTASSIUM (SPARK SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
†5084·5	1n	1·39	5·4	19662·2	3716·9	1n	1·03	7·6	26896·5
5057·4	1n	1·38	,,	19767·6	3713·2	1n	,,	,,	26923·3
5006·8	2s	1·37	5·5	19967·3	3682·3	4s	1·02	7·7	27149·2
†4965·5	1n	1·36	,,	20133·5	3670·2	1n	,,	,,	27238·8
†4943·8	1	1·35	5·6	20221·8	3618·4	3s	1·01	7·8	27628·7
4832·3	3s	1·32	5·7	20688·4	3610·4	2	1·00	,,	27690·0
4660·7	3s	1·28	5·9	21450·1	3531·2	2	0·98	8·0	28311·0
4650·7	2s	1·27	,,	21496·2	3481·5	1n	0·97	8·1	28715·2
4609·5	6s	1·26	6·0	21688·3	3476·7	1n	,,	,,	28754·8
4506·1	5s	1·24	6·1	22186·0	*†3447·0	10§	0·96	8·2	29002·5
4467·5	5s	1·22	6·2	22377·7	3440·5	6s	,,	,,	29057·3
4457·2	1n	,,	,,	22429·4	3433·8	1s	,,	,,	29114·1
4424·3	1n	1·21	6·3	22596·1	3421·5	1s	,,	8·3	29218·6
4388·2	3s	1·20	,,	22782·1	3403·8	2s	0·95	,,	29370·6
4309·3	1s	1·18	6·4	23199·2	3385·4	6s	,,	8·4	29530·2
4305·1	2s	,,	6·5	23221·8	3381·4	6s	,,	,,	29565·1
4263·2	6s	1·17	,,	23450·1	3373·0	1	0·94	,,	29638·8
4225·7	6s	1·16	6·6	23658·1	3362·8	1	,,	,,	29728·7
4223·1	6s	,,	,,	23672·7	3345·5	8s	,,	8·5	29882·4
4210·3	1	,,	,,	23744·7	3326·4	1s	0·93	,,	30054·0
4186·3	8s	1·15	6·7	23880·7	3322·0	1s	,,	8·6	30093·7
4149·1	6s	1·14	6·8	24094·8	3312·3	3s	,,	,,	30181·9
4134·7	6s	,,	,,	24178·8	3290·8	3s	0·92	,,	30379·1
4115·1	4s	1·13	,,	24293·9	3224·7	1s	0·91	8.8	31001·8
*†4047·4	10s	1·11	7·0	24700·2	3220·9	2s	0·90	,,	31038·4
*†4044·3				24719·2	*†3217·5	2§	,,	,,	31071·2
4040·2	1	,,	,,	24744·2	3209·0	1s	,,	8·9	31153·5
4026·0	1	,,	,,	24831·6	3202·1	1s	,,	,,	31220·6
4018·8	1n	,,	,,	24876·0	3190·2	2n	,,	,,	31337·1
4012·3	2	1·10	,,	24916·4	3169·2	1s	0·89	9·0	31544·7
4001·2	6s	,,	7·1	24985·4	3157·5	1s	,,	,,	31661·6
3995·0	1s	,,	,,	25024·2	3143·7	3s	,,	9·1	31800·6
3972·6	3s	1·09	,,	25165·3	3129·3	4s	0·88	,,	31946·9
3966·7	4s	,,	,,	25202·8	3104·5	5n	,,	9·2	32202·1
3955·3	4s	,,	7·2	25275·3	†3102·3	1n	,,	,,	32224·9
3943·3	2s	,,	,,	25352·3	3074·6	1n	0·87	9·3	32515·3
3934·7	1s	1·08	,,	25407·7	3067·3	1n	,,	,,	32592·7
3927·0	1s	,,	,,	25457·5	3062·4	6s	0·86	,,	32644·8
3923·8	1s	,,	,,	25478·3	3056·1	1n	,,	,,	32712·1
3898·1	8s	,,	7·3	25646·2	3051·5	1n	,,	9·4	32761·4
3884·2	1s	1·07	,,	25738·0	3030·0	1n	,,	,,	32993·9
3879·2	1s	,,	,,	25771·2	3023·0	1n	0·85	9·5	33070·2
3874·1	2s	,,	,,	25805·1	†2992·3	4s	,,	9·6	33409·5
3862·3	1s	,,	,,	25884·0	2986·0	1n	,,	,,	33480·0
3818·5	1n	1·06	,,	26181·0	2938·7	1n	0·83	9·8	34018·8
3800·8	1s	1·05	7·4	26302·8	2853·5	1n	0·81	10·1	35034·6
3783·2	3s	,,	,,	26425·2	2833·0	2n	,,	10·2	35288·1
3767·1	1s	1·04	7·5	26538·1	2819·0	1	0·80	10·3	35463·3
3757·4	1s	,,	,,	26606·6	2780·5	1	0·79	10·4	35954·4
3749·1	1s	,,	,,	26665·6	2736·2	1n	0·78	10·6	36536·4
3744·5	1	,,	,,	26698·3	2690·4	1n	0·77	10·8	37158·4
3739·2	1n	,,	,,	26736·2	2662·5	1	,,	10·9	37547·8
3727·5	1n	1·03	7·6	26820·0	2635·3	1	0·76	11·0	37935·3

§ Probably double.

Potassium (Spark Spectrum)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2614·0	1	0·76	11·1	38244·4	2274·4	1n	0·68	13·3	43954·3
2549·4	2s	0·74	11·4	39213·5	2268·1	1n	„	„	44076·5
2440·9	1	0·72	12·1	40956·4	2261·8	1	„	13·4	44199·2
2379·5	1	0·71	12·5	42013·1	2258·3	1	„	„	44267·7
2358·9	1n	0·70	12·6	42380·0	2254·9	1	„	„	44334·5
2350·4	1n	„	12·7	42533·2	2248·4	1	„	13·5	44462·6
2344·7	1n	„	„	42636·7	2243·5	1	„	„	44559·7
2341·7	1n	„	„	42691·3	2203·9	1	0·67	13·8	45360·3

Cadmium (Spark Spectrum).

Eder and Valenta: 'Denkschr., Wien,' Bd. lxi. 1894.

No.	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo	No.	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
	6467·4	2s	1·76	4·2	15458·0		4693·7	2s	1·29	5·9	21299·2
1	6439·3	10s	1·75	„	15525·4	6	†4678·4	10s	1·28	„	21368·9
	6057·7	2s	1·65	4·5	16503·4		†4662·7	3s	„	„	21440·9
	6004·7	2s	1·63	„	16649·1		4646·5	1s	1·27	„	21515·7
	5958·7	2s	1·62	4·6	16777·6		4634·8	1s	„	6·0	21569·9
	5914·1	2s	1·61	„	16904·1		4631·3	1s	„	„	21586·2
	5791·1	2s	1·58	4·7	17263·2		4600·0	1n	1·26	„	21733·1
	5688·2	4s	1·55	4·8	17575·4		4581·9	1s	„	„	21819·0
	5663·6	1s	1·54	„	17651·8		4541·6	1s	1·24	6·1	22012·6
	5640·6	1s	„	„	17723·8		4521·4	1s	„	„	22110·9
	5611·6	1s	1·53	„	17815·4		4491·3	1s	1·23	6·2	22259·1
	5490·2	6s	1·50	5·0	18209·3		4487·8	1s	„	„	22276·4
	5472·5	6s	1·49	„	18268·2		4443·4	2s	1·22	„	22499·1
	5391·1	2s	1·47	5·1	18544·0	7	†4415·9	10s	1·21	6·3	22639·1
2	5379·3	10s	„	„	18584·7		†4413·2	2	„	„	22653·0
3	5338·6	10s	1·46	„	18726·4		4403·5	1	„	„	22702·9
	5308·2	1s	1·45	„	18833·7		4393·5	1	1·20	„	22754·6
	5305·1	3s	„	„	18844·7		4293·9	2s	1·18	„	22752·5
	5203·9	1s	„	5·3	19211·1		4272·9	3s	1·17	6·5	23396·8
	5174·3	3s	1·41	„	19321·0		4271·2	3s	„	„	23406·1
	†5155·2	1s	„	„	19392·6		4245·8	4s	„	6·6	23546·1
4	†5086·1	10s	1·39	5·4	19656·0		4226·6	1n	1·16	„	23653·1
	5026·5	1s	1·37	5·5	19889·1		4217·1	6s	„	„	23706·4
	4854·7	2s	1·33	5·7	20592·9		4214·0	2s	„	„	23723·8
5	†4800·1	10s	1·31	„	20827·2		4191·8	4s	1·15	6·7	23849·4
	4783·6	1s	„	5·8	20899·0		4177·5	2s	„	„	23931·1
	4707·3	2s	1·29	5·9	21237·7		4171·6	2s	„	„	23964·9

† Occurs also in the Arc Spectrum. See Report, 1892.

CADMIUM (SPARK SPECTRUM)—*continued.*

No.	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	No.	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$					$\lambda +$	$\frac{1}{\lambda} -$	
	4163·9	2s	1·14	6·7	24009·2		3840·6	2s	10·6	7·3	26030·3
	4158·1	5s	,,	,,	24042·7		3837·9	2s	,,	,,	26048·6
	4142·1	4s	,,	6·8	24135·5		3808·2	3s	1·05	7·4	26251·7
	4139·8	2s	,,	,,	24149·0		†3614·6	2	1·00	7·8	27657·8
	4136·9	1n	,,	,,	24165·9	9*a*	†3613·0	8s	,,	,,	27670·0
	4134·3	1n	,,	,,	24181·1	9*b*	†3610·7	10s	,,	,,	27687·7
	4130·9	1n	1·13	,,	24201·0		3535·8	5s	0·98	8·0	28274·1
	4127·1	6s	,,	,,	24223·3		†3501·2	1n	,,	8·1	28553·5
	4116·8	3s	,,	,,	24283·9		3499·3	1n	,,	,,	28569·0
	4114·7	5s	,,	,,	24296·3	10*a*	†3467·8	10s	0·97	8·2	28828·5
	4112·8	1	,,	,,	24307·5	10*b*	†3466·3	10s	,,	,,	28841·0
	4102·6	1	,,	,,	24368·0	11	†3403·7	10s	0·95	8·3	29371·5
	4095·0	7s	,,	6·9	24413·1		†3299·1	1	0·92	8·6	30302·7
	4092·5	3s	1·12	,,	24428·0	12*a*	3285·8	4n	,,	8·7	30425·3
	4083·9	1	,,	,,	24479·5	12*b*	3283·6	4n	,,	,,	30445·7
	4077·4	1	,,	,,	24518·5		3276·9	3n	,,	,,	30507·9
	4075·8	1	,,	,,	24528·2		3264·2	2n	,,	,,	30626·7
	4072·1	1	,,	,,	24550·5		†3261·2	8s	,,	,,	30654·9
	4068·8	1	,,	,,	24570·4		†3252·6	7s	0·91	8·8	30735·8
	4066·3	1	,,	,,	24585·5		3250·5	7s	,,	,,	30755·7
	4064·1	1	,,	,,	24598·8		3236·4	2n	,,	,,	30889·7
	4057·7	5s	,,	,,	24637·6		3221·3	1n	,,	,,	31034·6
	4054·0	1n	1·11	,,	24660·1		3217·8	3n	0·90	,,	31068·3
	4049·1	3s	,,	7·0	24689·8		3212·0	1n	,,	8·9	31124·3
	4044·7	3s	,,	,,	24716·7		3209·9	3n	,,	,,	31144·7
	4038·6	1n	,,	,,	24754·1		3201·8	1n	,,	,,	31223·5
	4035·1	3s	,,	,,	24775·5		3197·5	1n	,,	,,	31265·5
	4029·2	1	,,	,,	24811·8		3196·2	1n	,,	,,	31278·2
	4023·3	1	,,	,,	24848·2		3185·4	4n	,,	,,	31384·3
	4018·5	2n	,,	,,	24877·9		3182·8	1n	,,	,,	31410·0
	4014·8	1n	1·10	,,	24900·8		3178·5	1n	0·89	9·0	31452·4
	4009·2	1n	,,	,,	24935·6		3176·7	1n	,,	,,	31470·2
	4006·0	1n	,,	,,	24955·6		§3173·8	3	,,	,,	31499·0
	3994·1	3s	,,	7·1	25029·8		3161·6	4n	,,	,,	31620·5
	3992·0	4s	,,	,,	25043·0		3157·1	3n	,,	,,	31665·6
8*a*	3988·4	5s	,,	,,	25065·6		3153·6	1n	,,	,,	31700·8
8*b*	3984·7	3s	,,	,,	25088·9		3141·2	1n	0·88	9·1	31825·9
	3977·8	6s	,,	,,	25132·4	13	†3133·3	8s	,,	,,	31906·1
	3976·8	6s	,,	,,	25138·7		3129·5	4s	,,	,,	31944·9
	3958·9	7s	1·09	,,	25252·4		3124·8	3s	,,	,,	31992·9
	3951·0	3s	,,	7·2	25302·8		3122·2	3s	,,	,,	32019·6
	3945·7	1	,,	,,	25336·8		3119·2	3s	,,	,,	32050·4
	3940·4	8s	,,	,,	25370·9		3113·5	2s	,,	9·2	32109·0
	3935·7	3s	1·08	,,	25401·2		3095·9	5s	0·87	,,	32291·6
	3919·6	4s	,,	,,	25505·6		3093·0	1	,,	,,	32321·9
	3910·5	1n	,,	,,	25565·0		3089·3	2	,,	,,	32360·6
	3902·9	1n	,,	7·3	25614·7	14*a*	3085·4	5s	,,	,,	32401·5
	3899·4	2s	,,	,,	25637·7	14*b*	†3081·0	5s	,,	9·3	32447·7
	3889·8	1	1·07	,,	25701·0		3077·3	1	,,	,,	32486·7
	3865·4	2s	,,	,,	25863·2		3068·9	3	,,	,,	32575·7
	3852·3	4s	1·06	,,	25951·2		3065·0	4	,,	,,	32617·1
	3848·2	2s	,,	,,	25978·9		3059·5	3	0·86	,,	32675·8
	3843·8	2s	,,	,,	26008·6		3053·2	3	,,	9·4	32743·1

§ Probably double.

Cadmium (Spark Spectrum)—*continued.*

No.	Wave-length	Intensity and Character	Reduction to Vacuum λ+	$\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo	No.	Wave-length	Intensity and Character	Reduction to Vacuum λ+	$\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo
	3048·9	3	08·6	9·4	32789·3		†2633·1	1n	0·76	11·0	37967·0
	3035·8	1	,,	,,	32930·8		†2629·7	1	,,	11·1	38016·0
	3024·8	1n	,,	9·5	33050·5		2619·1	2	,,	,,	38169·9
	3017·2	3	0·85	,,	33133·8		†2602·0	1n	0·75	11·2	38420·8
	3014·1	1	,,	,,	33167·9		†2592·3	1	,,	,,	38564·6
	3011·4	1n	,,	,,	33197·6		†2580·5	1	,,	11·3	38740·9
	3008·7	1n	,,	,,	33227·4	18	†2573·1	10s	,,	,,	38852·3
	3007·2	1n	,,	,,	33244·0		†2552·2	5	0·74	11·4	39170·5
	3003·8	1n	,,	,,	33281·7		2546·5	1	,,	11·5	39258·1
	2996·2	5n	,,	9·6	33366·0		†2544·9	1	,,	,,	39282·8
	2987·3	2n	,,	,,	33465·4	19	2499·9	3	0·73	11·7	39989·9
15	†2980·8	10s	0·84	,,	33538·4		2495·5	1	,,	,,	40060·4
	2971·8	2	,,	,,	33640·0		2487·9	3	,,	11·8	40182·7
	2964·6	1n	,,	9·7	33721·7		2478·7	2(Cd?)	,,	,,	40331·9
	†2961·8	2b^{v}	,,	,,	33753·5	20	2470·0	4	0·72	11·9	40473·9
	2952·4	2	,,	,,	33861·0		2446·1	2	,,	12·0	40869·4
	2948·9	4	,,	,,	33901·2		2433·8	1	,,	12·1	41075·9
	2926·6	1	0·83	9·8	34159·5		2426·6	1	,,	12·2	41197·7
	†2910·9	4	,,	9·9	34343·7		2423·9	1n	,,	,,	41243·6
	†2893·7	1	0·82	10·0	34547·8	21	2418·9	4	0·71	,,	41328·9
	†2880·9	10b	,,	,,	34701·4		2418·6	1	,,	,,	41334·0
	†2868·4	5b	,,	10·1	34852·5		2411·2	1	,,	12·3	41460·8
	†2862·0	2b	0·81	,,	34930·5		2377·0	2	,,	12·5	42057·3
16	†2837·0	8b	,,	10·2	35238·3		2375·0	1	,,	,,	42092·8
	2834·4	3b	,,	,,	35270·6		2355·4	1	0·70	12·6	42443·0
	2823·9	1	0·80	10·3	35401·7		2350·5	1	,,	12·7	42531·4
	†2818·5	1	,,	,,	35469·6		2343·5	1	,,	,,	42658·5
	2805·5	2	,,	,,	35634·0		2333·2	1	,,	12·8	42846·8
	2802·7	1	,,	,,	35669·6		†2329·4	7s	,,	,,	42916·7
	2795·7	2	,,	10·4	35758·8	22	†2321·2	8s	0·69	12·9	43068·3
	2780·1	1	0·79	,,	35959·5	23	†2313·0	10b	,,	13·0	43220·9
	†2775·1	6s	,,	10·5	36024·2		†2306·7	5s	,,	,,	43339·0
	2773·1	1n	,,	,,	36050·2		†2288·1	10sv	,,	13·2	43691·2
	2767·2	2	,,	,,	36127·1		†2267·5	3s	0·68	13·3	44088·1
	†2764·3	4s	,,	,,	36165·0	24	†2265·1	10sv	,,	,,	44134·9
	†2757·1	1	,,	,,	36259·5		2248·7	1	,,	13·5	44456·6
17	†2748·7	10s	,,	10·6	36370·2		†2239·9	3	,,	,,	44631·3
	†2734·0	3	0·78	,,	36565·8		2228·1	1n	0·67	13·6	44867·7
	2726·9	2	,,	10·7	36661·0		2224·3	3n	,,	13·7	44944·3
	†2712·0		,,	,,	36862·5		2204·0	1nv	,,	13·8	45358·2
	2706·9	2	,,	,,	36931·9	25	†2194·7	5s	,,	13·9	45550·4
	2677·7	8	0·77	10·9	37334·6		2187·9	1	,,	14·0	45691·9
	2671·0	2	,,	,,	37428·3		2183·1	1	,,	,,	45792·4
	2668·3	2	,,	,,	37466·1		†2168·8	1n	0·66	14·2	46094·2
	†2660·5	1	,,	,,	37576·0		†2144·5	5sv	,,	14·4	46616·5
	†2639·8	3b	0·76	11·0	37870·0		2111·6	2sv	0·65	14·7	47342·7

Compare Hartley and Adeney's list of Cadmium Spark Lines. Appendix F.

Mercury (Line Spectrum).

Eder and Valenta: 'Denkschr., Wien,' Bd. lxi. 1894.

The lines given below all occur in the spectrum of a mercury vacuum-tube strongly heated and excited by a powerful condensed spark. Those marked * occur also on a tube on higher pressure (10 mm. to 1,000 mm.) between 180° C. and 1,000° C. with the condensed spark. Those marked † occur in a highly exhausted tube between 15° C. and 80° C., with the spark without condenser. Those marked § occur in the condensed spark between mercury electrodes at atmospheric pressure, and those marked ‖ occur in the arc-spectrum.

** Probably double. ¶ Observed also by Vogel, *Wied. Ann.* v. 500.

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ−	
6363·5	2*§	6360 Huggins	1·73	4·3	15710·3
6152·3	9*§	6151·2 Thalén	1·67	4·4	16249·7
5889·1	8*§	5888·1 "	1·60	4·6	16975·9
5880·5	2		"	"	17000·8
5872·1	8*§	5871·1 "	"	"	17025·1
5864·4	2		"	"	17047·4
5854·5	1b		1·59	"	17076·3
5840·6	1		"	"	17116·9
5834·0	3		"	4·7	17136·2
5819·1	4*§‖	5817 Huggins	"	"	17180·1
5804·3	10*‡‖	5800 "	1·58	"	17223·9
5790·5	2*†§‖	5789·6 Thalén	"	"	17265·0
5781·9	1		"	"	17290·6
5769·5	10*†§‖	5768·1 "	1·57	"	17327·8
5746·6	3		"	"	17396·9
5727·7	5		1·56	"	17454·3
5717·0	1		"	4·8	17486·9
5713·4	2		"	"	17497·9
5699·0	3		1·55	"	17542·1
5695·7	1		"	"	17552·3
5679·1	10*§	5678·1 "	"	"	17603·6
5665·8	3		1·54	"	17645·0
5662·5	3		"	"	17655·2
5637·8	7*		"	"	17732·6
5596·0	8*§	5595·1 "	1·53	4·9	17865·0
5587·9	2		1·52	"	17890·9
5576·2	3		"	"	17928·5
5571·2	8		"	"	17944·6
5553·6	4*b		"	"	18001·4
5541·0	6*		1·51	"	18042·4
5513·4	3b		1·50	"	18132·7
5501·4	2		"	5·0	18172·2
5490·0	3		"	"	18209·9
**5484·6	4		"	"	18227·9
5476·3	4		1·49	"	18255·5
5461·0	10*†§‖b	5460·6 "	"	"	18306·7
5455·0	3		"	"	18326·8
5449·9	3		"	"	18344·0
5443·2	3		"	"	18366·5
5426·5	10*§b	5426·1 "	1·48	"	18423·1
5416·9	3		"	"	18455·7
5398·5	2		1·47	5·1	18518·6
5393·4	2		"	"	18536·1
5384·9	1		"	"	18565·3

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda+$	$\frac{1}{\lambda}-$	
5373·2	3		1.47	5·1	18605·8
5365·5	2*§‖	5364·6 Thalén	„	„	18632·5
5360·6	1n		1·46	„	18649·5
5355·5	1		„	„	18667·3
5352·4	1		„	„	18678·1
5346·3	3		„	„	18699·4
5334·3	2b		„	„	18741·5
5311·7	4		1·45	„	18821·3
5308·0	1		„	„	18834·4
5294·7	2		„	5·2	18881·6
5288·7	6*		1·44	„	18903·0
5284·2	3		„	„	18919·1
5281·5	5		„	„	18928·8
5279·3	4*§	5278·6 „	„	„	18936·7
5275·5	1		„	„	18950·3
5273·7	4		„	„	18956·8
5254·0	2		„	„	19027·9
5242·8	7*		1·43	„	19068·6
5233·8	4*		„	„	19101·4
5218·0	7*§	5217·2 „	„	„	19159·2
5211·2	4		1·42	„	19184·2
5207·0	7*§	5206·2 „	„	5·3	19199·6
5196·6	4		„	„	19238·0
5190·7	1		„	„	19259·9
5187·5	2		„	„	19271·8
5172·4	2n		1·41	„	19328·1
5163·2	4*		„	„	19362·5
5149·2	4*		„	„	19415·2
5141·5	1		„	„	19444·3
5135·6	5		1·40	„	19466·6
5132·0	7§	5131·2 „	„	„	19480·3
5113·7	1		„	5·4	19549·9
5107·3	3		„	„	19574·4
5102·9	3 } *		„	„	19591·3
5100·5	1 }		1·39	„	19600·5
5098·4	2		„	„	19608·6
5086·3	1		„	„	19655·3
5083·0	2		„	„	19668·0
5073·6	2		„	„	19704·5
5068·2	7*		„	„	19725·5
5062·6	4		1·38	„	19747·3
5058·4	1		„	„	19763·7
5051·8	1		„	„	19789·5
5048·4	2 } *		„	„	19802·9
5045·7	4 }		„	„	19813·5
5042·4	2		„	„	19826·4
5038·3	2		„	„	19842·6
5027·1	1		„	5·5	19886·7
5020·9	2		1·37	„	19911·2
5018·4	2		„	„	19921·2
5008·6	2b		„	„	19960·2
4992·5	5		„	„	20024·5
4986·7	3		1·36	„	20047·8
4981·3	3		„	„	20069·6
4974·0	6*		„	„	20099·0

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}-$	
4970·0	1		1·36	5·5	20115·2
4965·4	1		,,	,,	20133·9
4959·7	4*§‖b	4958·1 Thalén	,,	,,	20157·0
4949·4	3		1·35	,,	20199·0
4943·4	1b		,,	5·6	20223·4
4933·0	2		,,	,,	20266·0
4917·9	2		,,	,,	20328·3
4916·4	4*†§‖	4916·1 ,,	1·34	,,	20334·5
4913·0	2		,,	,,	20348·6
4902·1	4*		,,	,,	20393·8
4898·3	3 } *		,,	,,	20409·6
4895·8	2 }		,,	,,	20420·1
4880·2	1		,,	,,	20485·4
4869·9	3 } *		1·33	,,	20528·7
4867·3	4 }		,,	,,	20539·7
4864·8	3		,,	,,	20550·2
4856·6	3		,,	5·7	20584·8
4849·4	1		,,	,,	20615·4
4844·6	2s		,,	,,	20635·8
4841·3	4*		1·32	,,	20649·9
4826·0	8*§		,,	,,	20715·4
4813·0	4*		,,	,,	20771·4
4797·4	8*		1·31	,,	20838·9
4773·7	1		,,	5·8	20942·3
4768·1	6		,,	,,	20966·9
4753·4	3*		1·30	,,	21031·8
4744·7	6*		,,	,,	21070·3
4740·3	1		,,	,,	21089·9
4729·9	3		1·29	,,	21136·3
4697·9	1		,,	5·9	21280·2
4689·1	1		1·28	,,	21320·1
4687·0	1		,,	,,	21329·7
4681·6	2n		,,	,,	21354·3
4667·5	2		,,	,,	21418·8
4664·2	1		,,	,,	21434·0
4661·0	7*		,,	,,	21448·7
4651·7	5		1·27	,,	21491·6
4647·8	2		,,	,,	21509·7
4639·3	1		,,	,,	21549·1
4637·0	2		,,	,,	21559·8
4635·9	1*		,,	,,	21564·9
4634·2	1		,,	6·0	21572·7
4630·5	1		,,	,,	21589·9
4626·2	2b		,,	,,	21610·0
4620·5	1		,,	,,	21636·7
4616·5	1		1·26	,,	21655·4
4604·8	2		,,	,,	21710·5
4602·9	2		,,	,,	21719·4
4600·7	2		,,	,,	21729·8
4598·2	5*		,,	,,	21741·6
4593·5	1		,,	,,	21763·9
4587·1	2		,,	,,	21794·3
4580·1	1n		1·25	,,	21827·6
4578·2	1		,,	,,	21836·6
4576·9	1		,,	,,	21842·8

Mercury (Line Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4571·5	1		1·25	6·0	21868·6
4568·8	2b		,,	,,	21881·6
4562·3	2 }*		,,	6·1	21912·7
4553·8	6 }		,,	,,	21953·6
4547·0	2		,,	,,	21986·4
4544·2	4		,,	,,	22000·0
4541·7	1		1·24	,,	22012·1
4539·9	1n		,,	,,	22020·8
4537·7	2n		,,	,,	22031·5
4534·9	1		,,	,,	22045·1
4532·7	2		,,	,,	22055·8
4530·3	1		,,	,,	22067·5
4525·1	1		,,	,,	22092·9
4522·9	6*s		,,	,,	22103·6
4518·9	1		,,	,,	22123·2
4516·4	4		,,	,,	22135·4
4511·5	2		,,	,,	22159·5
4507·2	2		,,	,,	22180·6
4505·0	1b		1·23	,,	22191·5
4499·8	1		,,	,,	22217·1
4498·0	1		,,	,,	22226·0
4495·0	1s		,,	6·2	22240·7
4493·2	1s		,,	,,	22249·6
4491·9	1		,,	,,	22256·1
4490·3	3		,,	,,	22264·0
4486·8	8*b		,,	,,	22281·4
4483·7	3		,,	,,	22296·8
4480·7	1		,,	,,	22311·7
4470·5	5*		,,	,,	22362·7
4466·7	2n		1·22	,,	22381·7
4464·2	3		,,	,,	22394·2
4461·5	1		,,	,,	22407·8
4459·3	3		,,	,,	22418·8
4454·1	2n		,,	,,	22445·0
4450·7	1*		,,	,,	22462·2
4446·4	3		,,	,,	22483·9
4435·8	3		,,	,,	22537·6
4434·2	2		,,	,,	22545·8
4431·6	2		,,	6·3	22558·9
4425·9	8b		1·21	,,	22588·0
4422·2	2		,,	,,	22606·9
4420·6	2		,,	,,	22615·1
4416·0	1		,,	,,	22638·6
4415·4	3		,,	,,	22641·7
4414·0	3		,,	,,	22648·9
4412·1	3		,,	,,	22658·6
4408·4	1		,,	,,	22677·7
4401·5	10*b		,,	,,	22713·2
4391·9	10*b		1·20	,,	22762·9
4385·7	8		,,	,,	22795·1
4382·9	8		,,	,,	22809·6
4378·7	8*		,,	,,	22831·5
4376·1	10*		,,	,,	22845·1
4372·6	2†		,,	,,	22863·4
4369·6	1		,,	,,	22879·1

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4358·6	10*†§‖	4358·0 H. & A., 4358·1 T.	1·20	6·4	22936·7
4347·7	10*†§‖	4348·0 H. & A.	1·19	„	22994·3
4344·2	2	4341·0 „	„	„	23012·8
4339·5	6*†§‖		„	„	23037·7
4336·9	8		„	„	23051·5
4333·4	3		„	„	23070·2
4329·1	1		„	„	23093·1
4327·2	5		„	„	23103·2
4324·7	5		„	„	23116·6
4320·4	8		„	„	23139·6
4318·3	1		1·18	„	23150·9
4315·8	1		„	„	23164·3
4314·2 }	4		„	„	23172·9
4312·9 }	3*		„	„	23179·9
4310·3	2		„	„	23193·8
4308·6	1		„	6·5	23202·9
4306·6	4		„	„	23213·7
4305·5	4		„	„	23219·6
4304·0	1		„	„	23227·7
4301·7	2b		„	„	23240·1
4300·0	1		„	„	23249·3
4297·6	5 } *		„	„	23262·3
4292·3	5 }		„	„	23291·0
4290·1	3		„	„	23303·0
4288·2	2		„	„	23313·3
**4285·1	6		„	„	23330·2
4282·7	6*		„	„	23343·2
4276·7	3b		1·17	„	23376·0
4270·1	3		„	„	23412·1
4264·2	8*b		„	„	23444·6
4261·6	8*b		„	„	23458·9
4259·0	2		„	„	23473·2
4257·6	3		„	„	23480·9
4256·4	4		„	„	23487·5
4255·2	2		„	„	23494·2
4252·7	4		„	6·6	23507·9
4249·2	2b		„	„	23527·2
4248·9	5		„	„	23528·9
4237·7	5		1·16	„	23591·1
4234·5	6*		„	„	23608·9
4232·8	4		„	„	23618·4
4230·1	7*		„	„	23633·5
4227·4	8*		„	„	23648·6
4225·4	2		„	„	23659·8
4221·6	6*		„	„	23681·1
4219·4	1		„	„	23693·4
4218·6	2		„	„	23697·9
4216·8	10*§b		„	„	23708·1
4211·8	6*		„	„	23736·2
4206·6	5		„	„	23765·6
4200·8	1		1·15	„	23798·4
4199·1	1		„	6·7	23807·9
4196·8	6		„	„	23821·0
4192·4	5*		„	„	23846·0
4186·0	7		„	„	23882·4

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
4183·0	1		1·15	6·7	23899·6
4181·5	1		„	„	23908·2
4178·5	8*		„	„	23925·3
4175·9	6		„	„	23940·2
4169·0	2		1·14	„	23979·9
4167·8	1		„	„	23986·8
4165·7	1		„	„	23998·9
4164·6	1		„	„	24005·2
4162·0	8*		„	„	24020·2
4157·1	4		„	„	24048·5
4155·1	3*		„	„	24060·1
4149·5	3		„	„	24092·6
4148·6	1		„	6·8	24097·7
4145·0	2		„	„	24118·6
4143·7	1		„	„	24126·2
4140·5	7*		„	„	24144·9
4134·9	2*		„	„	24177·6
4132·7	1		„	„	24190·5
4124·3	2		1·13	„	24239·7
4123·0	1		„	„	24247·4
4120·9	8*§b		„	„	24259·7
4117·5	3		„	„	24279·8
4115·3	8*§		„	„	24292·8
4109·1	6*§		„	„	24329·4
4106·9	6*		„	„	24342·5
4104·1	8*		„	„	24359·1
4098·0	3		„	6·9	24395·2
4096·5	1		„	„	24404·2
4093·1	2		1·12	„	24424·5
4091·8	2		„	„	24432·2
4088·4	2		„	„	24452·5
4086·9	1		„	„	24461·5
4084·6	1		„	„	24475·3
4083·1	4		„	„	24484·3
4080·7	1		„	„	24498·7
4078·1	10*†§‖b		„	„	24514·3
4077·0¶	5	4077·5 H. & A.	„	„	24520·9
4073·6	4		„	„	24541·4
4069·8	3		„	„	24564·3
4066·7	2		„	„	24583·1
4062·5	2		„	„	24608·5
4061·8	1		„	„	24612·7
4061·0	4		„	„	24617·6
4057·9	4*†		„	„	24636·4
4056·0	1		„	„	24647·9
4054·5	1		1·11	„	24657·0
4053·5	4		„	„	24663·1
4046·8¶	10*†§‖	4046·5 H & A.	„	7·0	24703·9
4040·7	5*§		„	„	24741·2
4037·5	4		„	„	24760·8
4035·3	5		„	„	24774·3
4033·0	7b		„	„	24788·4
4030·9	1*§		„	„	24801·4
4029·9	3		„	„	24807·5
4024·4	8*§b		„	„	24841·4

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ +	$\frac{1}{\lambda}$ −	
4022·0	1		1·11	7·0	24856·2
4021·0	2		,,	,,	24862·4
4020·1	4		,,	,,	24868·0
4014·8	1		1·10	,,	24900·8
4013·7	6b		,,	,,	24907·7
4011·0	2		,,	,,	24924·4
4010·0	1		,,	,,	24930·7
4006·0	8*b		,,	,,	24955·6
4003·5	4		,,	7·1	24971·0
4001·8	3		,,	,,	24981·6
3999·9	1		,,	,,	24993·5
3999·2	2		,,	,,	24997·9
3998·2	1		,,	,,	25004·2
3996·8	1		,,	,,	25012·9
3995·8	1		,,	,,	25019·2
3993·8	6		,,	,,	25031·7
3989·8	2		,,	,,	25056·8
3988·8	1		,,	,,	25063·1
3984·1¶	10*§‖b	3984·0 H. & A.	,,	,,	25092·7
3978·8	4		,,	,,	25126·1
3976·5	6		,,	,,	25140·6
3971·6	1		,,	,,	25171·7
3970·3	1		,,	,,	25179·9
3967·9	8*b		,,	,,	25195·1
3964·9	4*		,,	,,	25214·2
3962·9	5 } *		,,	,,	25226·9
3960·2	5 } *		,,	,,	25244·1
3954·7	6		,,	7·2	25279·2
3951·1	2		,,	,,	25302·2
3950·2	3		,,	,,	25308·0
3948·3	7b		,,	,,	25320·2
3945·2	6*		,,	,,	25340·1
3942·3	8*		,,	,,	25358·7
3939·6	3		,,	,,	25376·1
3936·7	5		1·08	,,	25394·8
3931·7	2		,,	,,	25427·1
3930·3	2		,,	,,	25436·1
3928·1	6		,,	,,	25450·4
3925·5	8b		,,	,,	25467·3
3922·0	7		,,	,,	25490·0
3918·9	7		,,	,,	25510·2
3916·4	5		,,	,,	25526·4
3914·5	5*§		,,	,,	25538·8
3911·1	1		,,	,,	25561·1
3909·7	1		,,	,,	25570·2
3908·9	2		,,	7·3	25575·3
3906·6	4*†§‖b		,,	,,	25590·4
3904·4	2		,,	,,	25604·8
3903·7	3		,,	,,	25609·4
3902·1	1*		,,	,,	25619·9
3901·6	1		,,	,,	25623·2
3900·1	5		,,	,,	25633·1
3899·0	4		,,	,,	25640·3
3897·5	1		,,	,,	25650·2
3896·3	1		1·07	,,	25658·1

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3895·6	1		1·07	7·3	25662·7
3887·3	3		,,	,,	25717·5
3883·9	1		,,	,,	25740·0
3882·0	1n		,,	,,	25752·6
3881·1	5		,,	,,	25758·6
3878·0	1		,,	,,	25779·2
3875·2	6*		,,	,,	25797·8
3874·3	1		,,	,,	25803·8
3873·6	2		,,	,,	25808·5
3870·3	1		,,	,,	25830·5
3869·3	3		,,	,,	25837·2
3864·0	1		,,	,,	25872·6
3863·4	1		,,	,,	25876·6
3860·4	2 } *§	3859·0 H. & A.	,,	,,	25896·8
3857·5	3 }		,,	,,	25916·2
3856·6	2		1·06	,,	25922·3
3851·2	2		,,	,,	25958·6
3845·1	6*		,,	,,	25999·8
3843·2	4		,,	,,	26012·7
3842·0	1		,,	,,	26020·8
3840·5	2		,,	,,	26031·0
3839·4¶	4*§b		,,	,,	26038·4
**3837·8	2		,,	,,	26049·3
3835·9	1		,,	,,	26062·2
3834·6	3		,,	,,	26071·0
3833·6	1		,,	,,	26077·8
3832·6	2		,,	,,	26084·6
3829·6	2 } *		,,	,,	26105·1
3829·4	2 }		,,	,,	26106·4
3826·8	5		,,	,,	26124·2
3822·7	2		,,	,,	26152·2
3820·6¶	2*§‖b	3820·0 ,,	,,	,,	26166·6
3817·7	1		,,	7·4	26186·4
3816·3	4		1·05	,,	26196·0
3814·2	1n		,,	,,	26210·4
3812·7	2		,,	,,	26220·7
3811·5	3		,,	,,	26229·0
3811·1	1		,,	,,	26231·7
3810·4	2		,,	,,	26236·6
3809·0	4		,,	,,	26246·2
3807·6	4*§n	3807·0 ,,	,,	,,	26255·9
3803·6	4		,,	,,	26283·5
3801·5	4*§b	3800·0 ,,	,,	,,	26298·0
3797·6	3*b		,,	,,	26325·0
3795·8	3		,,	,,	26337·5
3792·7	1		,,	,,	26359·0
3790·4¶	3*§‖b	3790·0 ,,	,,	,,	26375·0
3788·0	2		,,	,,	26391·8
3787·2	1		,,	,,	26397·3
3786·3	1		,,	,,	26403·6
3784·6	1		,,	,,	26415·5
3783·8	1		,,	,,	26421·1
3782·5	2		,,	,,	26430·1
3780·8	2		,,	,,	26442·0
3779·7	1		,,	,,	26449·7

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3776·5	3n		1·04	7·4	26472·1
3774·3¶	8*b		„	„	26487·6
3770·7	5*§‖b	3770·0 H. & A.	„	7·5	26512·8
3762·2	1		„	„	26572·7
3759·9	4		„	„	26588·9
3757·3	4		„	„	26607·4
3756·6	1		„	„	26612·3
3755·5¶	1*§n		„	„	26620·1
3752·5	2		„	„	26641·4
3751·8	3*§‖	3751·0 „	„	„	26646·4
3750·9	3		„	„	26652·8
3747·5	2		„	„	26677·0
3743·9	1		„	„	26702·6
3742·6	2		„	„	26711·9
3741·7	1		„	„	26718·3
3740·7	1		„	„	26725·5
3738·9	1		„	„	26738·3
3735·0	2		1·03	„	26766·3
3729·5	5		„	„	26805·7
3726·9	1		„	7·6	26824·3
3726·3	1		„	„	26828·7
3724·7	1		„	„	26840·2
3718·0	1		„	„	26888·6
3715·5	3		„	„	26906·7
3712·9	1		„	„	26925·5
3711·2	1		„	„	26937·9
3709·6	3		„	„	26949·5
3708·2	3		„	„	26959·7
3707·6	1		„	„	26964·0
3707·0	2		„	„	26968·4
3705·7	3		„	„	26977·8
3704·9	1		„	„	26983·7
3704·6	1		„	„	26985·9
3703·4	6		„	„	26994·6
3702·4	3		„	„	27001·9
3701·4	1		„	„	27009·2
3698·6	2		„	„	27029·6
3695·6	1		1·02	„	27051·6
3691·8	3		„	„	27079·5
3690·0	4		„	„	27092·7
3689·2	1		„	„	27098·5
3688·5	1		„	„	27103·7
3685·2	6		„	„	27128·0
3680·7	6*§‖bʳ	3681·9 „	„	7·7	27161·0
3665·4	3		„	„	27274·4
3663·3	10*†§‖b	3662·9 „	„	„	27290·1
3661·4	3		„	„	27304·3
3659·4	1		„	„	27319·2
3656·4	1		1·01	„	27341·6
3654·9	8*†§‖	3654·4 „	„	„	27352·8
3651·9	3		„	„	27375·3
3650·3	10*†§‖	3650·0¶	„	„	27387·3
3644·5	5		„	„	27430·9
3642·5	1		„	„	27446·0
3638·5	5		„	7·8	27476·0

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3633·5	3*		1·01	7·8	27513·9
3632·5	1		"	"	27521·4
3630·3	5		"	"	27538·1
3627·6	1		"	"	27558·6
3623·4	1s		"	"	27590·6
3620·0	1		"	"	27616·5
3618·6	5§		"	"	27627·2
3616·0	2		1·00	"	27647·1
3613·7	4§		"	"	27664·7
3610·7	1		"	"	27687·7
3609·1	1		"	"	27699·9
3607·6	5§		"	"	27711·5
3604·2	2§		"	"	27737·6
3594·7	3§		"	7·9	27810·8
3593·2	3§		"	"	27822·4
3590·9	1§		"	"	27840·3
3577·7	2§		0·99	"	27943·0
3561·5	5*†§‖b	3560·1 H. & A.	"	"	28070·2
3549·6	1		"	8·0	28164·2
3543·7	5*†§‖b	3542·3 "	"	"	28211·1
3533·5	2		0·98	"	28292·6
3518·0	1		"	"	28417·2
3500·1	1		"	8·1	28562·5
3494·5	1§	3492·6 "	0·97	"	28608·3
3473·6	1§	3473·4 "	"	"	28780·5
3456·3	1		0·96	8·2	28924·5
3451·8	2§	3451·4 "	"	"	28962·2
3440·6	1		"	"	29056·5
3437·1	1		"	"	29086·1
3434·7	1		"	"	29106·4
3431·7	2b		"	8·3	29131·8
3423·5	1		"	"	29201·6
3414·9	1		0·95	"	29275·1
3410·0	1		"	"	29317·2
3407·1	1		"	"	29342·2
3396·1	1		"	8·4	29437·1
3390·5	5†§‖b	3389·5 "	"	"	29485·8
3386·6	1s		"	"	29519·7
3366·7	2†§‖n	3365·5 "	0·94	"	29694·3
3351·5	4†§‖	3351·2 "	"	8·5	29828·9
3341·7	6†§‖	3341·2 "	"	"	29916·4
3320·5	1	3326·4 "	0·93	8·6	30107·3
3305·2	1§‖		"	"	30246·8
3278·5	2†§		0·92	8·7	30493·1
3264·3	2†§‖		"	"	30625·7
3227·5	2§		0·91	8·8	30974·9
3208·7	3†§	3207·1 "	0·90	8·9	31156·4
3207·7	1		"	"	31166·1
3144·6	3§‖b		0·89	9·1	31791·4
3135·9	1‖n		0·88	"	31879·7
3131·8	5†§‖	3130·4	"	"	31921·4
3125·8	5†§‖	3124·8	"	"	31982·7
3116·5	1		"	"	32078·2
3107·7	1		"	9·2	32168·9
3096·0	2§‖	3094·0 H. & A.	0·87	"	32290·5

Mercury (Line Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
3093·3	1		0·87	9·2	32318·7
3090·6	1		„	„	32347·0
3085·4	1§‖n		„	„	32401·5
3051·0	2§‖		0·86	9·4	32766·7
3038·7	2‖s		„	„	32899·4
3027·6	2†‖		„	„	33020·1
3023·7	2†‖		„	9·5	33062·6
3021·6	3†§‖	3021·0 H. & A.	0·85	„	33085·5
3011·2	1‖n		„	„	33199·8
3007·0	2§‖n		„	„	33246·2
2972·8	1s		0·84	9·6	33628·7
2967·4	8†§‖	2966·4 „	„	9·7	33689·8
2955·3	1		„	„	33827·8
2953·3	1n		„	„	33850·7
2947·5	3†§	2946·6 „	„	„	33917·4
2942·6	1n		0·83	9·8	33973·8
2941·3	1n		„	„	33988·8
2939·8	1§		„	„	34006·1
2935·8	2§	2935·5 „	„	„	34052·5
2925·5	7†§‖	2925·2 „	„	„	34172·4
2916·4	3†§	2915·3 „	„	9·9	34278·9
2915·5	1		„	„	34289·5
2893·7	7†§‖	2892·9 „	0·82	10·0	34547·8
2886·8	1§		„	„	34630·4
2882·2	1†		„	„	34685·7
2873·3	2§s		„	„	34793·2
2865·1	2§‖b		„	10·1	34892·7
2857·1	4†§‖		0·81	„	34990·4
2852·0	1		„	„	35053·0
2847·9	8†§‖	2846·8 „	„	10·2	35103·4
2842·0	1n		„	„	35176·3
2835·0	1		„	„	35263·2
2833·5	2§‖	2832·1 „	„	„	35281·8
2820·0	4†§‖b	2819·7	0·80	10·3	35450·7
2806·5	1†§	2810·0 H. & A.	„	„	35621·3
2804·4	1†§	2804·5 „	„	„	35647·9
2803·7	3†§‖		„	„	35656·9
2799·8	1§	2798·5 „	„	„	35706·5
2791·2	3§	2790·0 „	„	10·4	35816·5
2789·1	1		„	„	35843·5
2784·6	1		„	„	35901·4
2781·0	1		0·79	„	35947·9
2774·7	2§‖	2773·2 „	„	10·5	36029·4
2767·6	1		„	„	36121·9
2762·2	2§		„	„	36192·5
2759·8	2†§‖	2760·8 „	„	„	36224·0
2752·9	6†§‖	2751·5	„	„	36314·8
2741·3	1n		0·78	10·6	36468·4
2726·5	1§		„	10·7	36666·4
2724·2	1§		„	„	36697·3
2710·4	1§		„	„	36884·2
2705·5	1§		„	„	36951·0
2702·7	2§	2702·0 H. & A.	„	10·8	36989·2
2699·5	3†‖		„	„	37033·1
2686·7	2§‖b		0·77	„	37209·6

MERCURY (LINE SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2675·2	1‖		0·77	10·9	37369·5
2672·8	1§‖		„	„	37403·0
2664·5	1		„	„	37519·6
2660·6	1§‖		„	„	37574·6
2658·6	1n	2657·6 H. & A.	„	„	37602·9
2655·3	2†§‖		„	„	37649·6
2653·9	2†§‖		0·76	11·0	37669·4
2652·2	3†§‖	2652·2 „	„	„	37693·5
2648·3	1§‖		„	„	37749·1
2642·7	2§‖b	2644·6 „	„	„	37829·1
2640·5	1†	2640·6 „	„	„	37860·6
2629·0	1n		„	11·1	38026·2
2625·7	1		„	„	38074·0
2614·8	1		„	„	38232·7
2609·7	2§‖		0·75	„	38307·5
2605·3	2§‖		„	11·2	38372·1
2603·1	3†§	2602·3 „	"	„	38404·5
2598·3	1		„	„	38475·5
2584·7	2§	2584·2 „	„	11·3	38677·9
2576·3	3†§‖		„	„	38804·1
2575·2	2§	2575·3 „	„	„	38820·6
2564·1	1†§‖		0·74	11·4	38988·6
2561·4	1		„	„	39029·7
2558·0	1§		„	„	39081·6
2540·4	2§‖		„	11·5	39352·4
2536·7	6†§‖	2535·8	„	„	39409·8
2534·9	3†§‖	2533·8	„	„	39437·8
2524·8	2§‖b	2522·7	„	11·6	39595·5
2515·2	2§	2514·3	0·73	„	39746·7
2507·2	1		„	11·7	39873·4
2505·0	1§‖		„	„	39908·5
2499·4	1		„	„	39997·9
2492·2	3†§s	2491·4	„	11·8	40113·4
2490·2	1§		„	„	40145·6
2483·9	1†§	2484·2	„	„	40247·5
2482·9	1†		„	„	40263·7
2482·1	2†§‖		„	„	40276·7
2478·8	1†§‖n	2477·7	„	„	40330·3
2478·2	1†		„	„	40340·1
2469·5	1§		0·72	11·9	40482·1
2468·1	2§	2468·0 H. & A.	„	„	40505·1
2464·2	4†§‖	2463·7 „	„	„	40569·2
2459·6	1§	2459·3 „	„	12·0	40645·0
2447·0	2†§‖		„	„	40854·4
2414·3	4†§	2414·3	0·71	12·2	41407·7
2412·3	1†§‖		„	12·3	41441·9
2407·6	4†§	2407·3	„	„	41522·8
2399·6	2‖		„	„	41661·3
2390·3	1§	2390·0	„	12·4	41823·3
2380·1	1n		„	12·5	42002·5
2378·4	3†§‖		„	„	42032·6
2374·1	1‖n		„	„	42108·7
2369·3	2§		0·70	„	42194·1
2354·3	1§	2355·2 H. & A.	„	12·7	42462·8
2353·6	1†		„	„	42475·4

Mercury (Line Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2352·6	1†n		0·70	12·7	42493·5
2345·4	2†§‖		„	„	42623·9
2341·9	1§	2342·2 H. & A.	„	„	42687·7
2340·5	1§	2340·0	„	12·8	42713·1
2339·3	3§		„	„	42735·0
2335·1	1§n		„	„	42811·9
2327·5	1n		„	12·9	42951·7
2323·1	1n		0·69	„	43033·0
2321·0	1§n		„	„	43072·0
2315·0	1§b	2315·2	„	„	43183·6
2301·6	1†‖b		„	13·0	43435·0
2296·4	1§b	2296·5	„	13·1	43533·3
2292·0	2§n	2292·6	„	„	43616·9
2284·0	1		„	13·2	43769·6
2264·0 ⎫	2†§b	2264·2	0·68	13·3	44156·3
2262·2 ⎬	2†§‖	2263·3	„	13·4	44191·4
2260·4 ⎭	2†§‖	2261·4	„	„	44226·6
2258·6	1n		„	„	44261·8
2252·9	2†§‖	2254·0	„	„	44373·8
2244·1	1§		„	13·5	44547·8
2230·0	2§	2231·0	0·67	13·6	44829·4
2224·7	2†§‖b	2225·7	„	13·7	44936·2
2191·3	1§	2190·9	„	14·0	45621·0
2150·6	1§	2148·0	0·66	14·3	46484·3

Mercury (Band Spectrum—Spark in Vacuum Tube without Leyden Jar).

Eder and Valenta, 'Denkschr. Wien,' Bd. lxi. 1894.

Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
α4517·1	2s ⎫ b^r First band	1·24	6·1	22132·0	4477·0	3	1·23	6·2	22330·2
β4514·3	2s ⎪	„	„	22145·7	4474·6	1	„	„	22342·2
4513·0	1 ⎬	„	„	22152·1	4465·5	3	1·22	„	22387·7
4510·5	2 ⎪	„	„	22164·4	4462·6	1	„	„	22402·3
4508 7	2 ⎭	„	„	22173·2	4451·4	2	„	„	22458·6
4505 2	2	1·23	„	22190·5	*4448·8	1	„	„	22471·8
*4502 5	2	„	„	22203·8	4434·8	1	„	„	22542·7
4497 9	2	„	„	22226·5	4433·4	1	„	„	22549·8
4495 4	1	„	6·2	22238·8	α ⎧ 4396·3	3s ⎫ b^r Second band	1·21	6·3	22740·1
4493 4	1	„	„	22248·7	α ⎩ 4395·0	3s ⎪	„	„	22746·8
4489 3	3	„	„	22269·0	β ⎧ 4393·2	4s ⎪	1·20	„	22756·1
4487 2	3	„	„	22279·4	β ⎨ 4392·6	3s ⎬	„	„	22759·3
4484·9	1	„	„	22290·8	β ⎩ 4391·5	2s ⎪	„	„	22765·0
4478·8	3	„	„	22321·2	4390·4	3 ⎭	„	„	22770·7

* Perhaps double.

MERCURY (BAND SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4389·4	3	1·20	6·3	22775·8
4388·1	3	,,	,,	22782·6
4386·5	4	,,	,,	22790·9
4385·2	3	,,	,,	22797·7
4384·4	3	,,	,,	22801·8
4382·8	2	,,	,,	22810·2
4382·0	2	,,	,,	22814·3
4381·3	3	,,	,,	22818·0
4380·0	2	,,	,,	22824·7
4378·3	2	,,	,,	22833·6
4378·0	2	,,	,,	22835·2
4376·2	2	,,	,,	22844·6
4374·9	1	,,	,,	22851·4
4374·5	1	,,	,,	22853·4
[4372·6	3, line spectrum]	,,	,,	22863·4
4370·6	2	,,	,,	22873·9
4369·4	1	,,	,,	22880·1
4369·1	1	,,	,,	22881·7
4368·3	1	,,	6·4	22885·8
4366·1	3	,,	,,	22827·3
4364·0	3	,,	,,	22908·4
[4358·6	10b, line spectrum]	,,	,,	22936·7
4353·2	2	1·19	,,	22965·2
4352·6	2	,,	,,	22968 4
4350·0	3	,,	,,	22982·1
[4347·7	10b, line spectrum]	,,	,,	22994·3
4344·0	2	,,	,,	23013·9
4343·1	2	,,	,,	23018·6
4340·6	3	,,	,,	23031·9
[4339·5	10b, line spectrum]	,,	,,	23037·7
*4338·4	1	,,	,,	23043·6
4336·8	2	,,	,,	23052·1
4332·8	1	,,	,,	23073·4
4332·0	1	,,	,	23077·6
4330·6	2	,,	,,	23085·1
4330·1	2	,,	,,	23087·8
4328·7	3	,,	,,	23095·2
4326·4	1	,,	,,	23107·5
4321·1	1	,,	,,	23135·9
4319·6	1	,,	,,	23143·9
4318·0	2	1·18	,,	23152·5
4317·6	2	,,	,,	23154·6
4315·2	1	,,	,,	23167·5
4308·3	1	,,	6·5	23204·5
4307·3	1	,,	,,	23209·9
4305·6	3	,,	,,	23219·1
4303·2	1	,,	,,	23232·0

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4294·8	2	1·18	6·5	23277·5
4292·4	2	,,	,,	23290·5
4291·2	2	,,	,,	23297·0
4289·8	1	,,	,,	23304·6
4282·3	1	,,	,,	23345·4
4278·1	2	1·17	,,	23368·4
4275·3	1	,,	,,	23383·7
4266·5	1	,,	,,	23431·9
4262·9	1	,,	,,	23451·7
4260·6	1	,,	,,	23464·4
4250·7	1	,,	6·6	23518·9
4246·1	1	,,	,,	23544·4
4243·6	1	1·16	,,	23558·3
4233·8	1	,,	,,	23612·8
&c , &c.	Numerous very faint lines			
α 4218·9	3s	,,	,,	23696·3
α 4218·3	3s	,,	,,	23699·6
4218·0	1	,,	,,	23701·3
4217·6	2 br Third band	,,	,,	23703·6
4216·8	1	,,	,,	23708·1
4215·9	1	,,	,,	23713·1
4215·0	1	,,	,,	23718·2
β 4214·1	4s	,,	,,	23723·3
β 4213·8	4s	,,	,,	23724·9
4212·9	5	,,	,,	23730·0
4212·1	1	,,	,,	23734·5
*4211·2	4	,,	,,	23739·6
4210·2	1	,,	,,	23745·2
4209·1	3	,,	,,	23751·4
4208·7	2	,,	,,	23753·7
4207·6	2	,,	,,	23759·9
4207·2	2	,,	,,	23762·2
4206·7	1	,,	,,	23765·0
4206·3	3	,,	,,	23767·3
*4205·5	2	1·15	,,	23771·8
4204·7	2	,,	,,	23776·3
4203·5	1	,,	,,	23783·1
4202·8	1	,,	,,	23787·1
4201·9	2	,,	,,	23792·2
4201·3	2	,,	,,	23795·6
4199·8	1	,,	6·7	23803·9
4198·6	1	,,	,,	23810·8
4197·6	1	,,	,,	23816·4
4197·0	3	,,	,,	23819·8
4195·2	1	,,	,,	23830·1
4194·4	2	,,	,,	23834·6
4192·8	1	,,	,,	23843·7
4192·3	1	,,	,,	23846·5
4191·6	2	,,	,,	23850·5
4190·3	1	,,	,,	23857·9
4189·1	2	,,	,,	23864·8
4187·1	4	,,	,,	23876·2

MERCURY (BAND SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda +$	$\frac{1}{\lambda} -$				$\lambda +$	$\frac{1}{\lambda} -$	
4185·9	2	1·15	6·7	23883·0	4101·6	2	1·13	6·8	24373·9
4185·1	2	,,	,,	23887·6	4100·6	2	,,	,,	24379·9
4183·6	3	,,	,,	23896·2	4097·8	1	,,	6·9	24396·4
4181·3	3	,,	,,	23909·3	4096·7	1	,,	,,	24403·0
4181·0	1	,,	,,	23911·0	4096·2	1	,,	,,	24406·0
4180·2	1	,,	,,	23915·6	4091·8	1	1·12	,,	24432·2
4179·7	2	,,	,,	23918·5	4089·9	3	,,	,,	24443·6
4178·8	2	,,	,,	23923·6	4087·3	2	,,	,,	24459·1
4177·2	3	,,	,,	23932·8	4085·5	2	,,	,,	24469·9
4175·0	4	,,	,,	23945·4	4084·5	2	,,	,,	24475·9
4173·9	2	,,	,,	23951·7	4079·5	1	,,	,,	24505·9
4172·5	3	,,	,,	23959·7	4079·0	2	,,	,,	24508·9
4172·0	2	,,	,,	23962·6	[4078·1	8b, line	,,	,,	24514·3
4170·0	3	,,	,,	23974·1		spec-			
4169·1	1	,,	,,	23979·3		trum]			
4167·8	3	1·14	,,	23986·8	4077·1	3	,,	,,	24520·3
4167·2	1	,,	,,	23990·2	4076·6	2	,,	,,	24523·3
4166·2	2	,,	,,	23996·0	4075·5	1	,,	,,	24530·0
*4164·8	3b	,,	,,	24004·0	4073·0	2	,,	,,	24545·0
4164·1	1	,,	,,	24008·1	4071·7	2	,,	,,	24552·9
4162·1	3	,,	,,	24019·6	4063·9	2	,,	,,	24600·0
4160·0	3	,,	,,	24031·8	4062·0	1	,,	,,	24611·5
4157·9	2	,,	,,	24043·9	4059·6	1	,,	,,	24626·1
4156·7	4	,,	,,	24050·8	4058·4	2	,,	,,	24633·3
4155·0	1	,,	,,	24060·7	[4057·9	3s, line	,,	,,	24636·4
4153·9	3	,,	,,	24067·1		spec-			
4152·0	4	,,	,,	24078·1		trum]			
4149·0	1	,,	6·8	24095·4	4050·7	1	1·11	7·0	24680·1
4148·4	3	,,	,,	24098·9	4049·8	2	,,	,,	24685·6
4145·2	1	,,	,,	24117·5	4049·0	1	,,	,,	24690·5
4144·6	1	,,	,,	24121·0	4048·1	1	,,	,,	24695·9
4143·3	4	,,	,,	24128·5	4047·6	3	,,	,,	24699·0
4142·4	1	,,	,,	24133·8	[4046·8	10b,line	,,	,,	24703·9
4139·4	4	,,	,,	24151·3		spec-			
4139·1	3	,,	,,	24153·0		trum]			
4138·4	1	,,	,,	24157·1	4044·5	3	,,	,,	24717·9
4134·6	3	,,	,,	24179·3	4042·0	1	,,	,,	24733·2
4133·7	3	,,	,,	24184·6	4040·6	1	,,	,,	24741·8
4129·9	2	1·13	,,	24206·9	4038·7	1	,,	,,	24753·4
4129·5	2	,,	,,	24209·2	4037·1	1	,,	,,	24763·3
4128·8	2	,,	,,	24213·3	4035·1	2	,,	,,	24775·5
4124·0	2	,,	,,	24241·5	4034·6	1	,,	,,	24778·6
4123·8	2	,,	,,	24242·7	4034·2	1	,,	,,	24781·1
4123·3	2	,,	,,	24245·6	4032·8	1	,,	,,	24789·7
4121·7	1	,,	,,	24255·0	4031·6	1	,,	,,	24797·0
4119·6	2	,,	,,	24267·4	4030·8	1	,,	,,	24802·0
4118·9	2	,,	,,	24271·5	4029·8	2	,,	,,	24808·1
4117·5	1	,,	,,	24279·8	4027·8	1	,,	,,	24820·4
4113·3	2	,,	,,	24304·6	4026·8	1	,,	,,	24826·6
4112·8	1	,,	,,	24307·5	4026·2	1	,,	,,	24830·3
4109·8	1	,,	,,	24325·3	4025·4	1	,,	,,	24835·2
4109·0	1	,,	,,	24330·0	4024·2	1	,,	,,	24842·7
4108·2	4	,,	,,	24334·8	4022·2	1	,,	,,	24855·0
4105·2	1	,,	,,	24352·5	4020·4	1	,,	,,	24866·1
4101·9	3	,,	,,	24372·1	4020·2	1	,,	,,	24867·4

MERCURY (BAND SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum		Oscillation Frequency in Vacuo
		$\lambda+$	$\frac{1}{\lambda}-$				$\lambda+$	$\frac{1}{\lambda}-$	
4018·8	1	1·11	7·0	24876·0	3970·7	1	1·09	7·1	25177·4
α4017·5	4	,,	,,	24884·1	3970·1	1	,,	,,	25181·2
α4017·5	4s	,,	,,		3969·7	3	,,	,,	25183·7
α4017·1	4s	,,	,,	24886·6	3969·1	2	,,	,,	25187·5
*4016·2	2	,,	,,	24892·2	3967·8	3	,,	,,	25195·8
4015·1	3	1·10	,,	24899·0	3965·7	4	,,	,,	25209·1
4014·9	1	,,	,,	24900·2	3965·4	4	,,	,,	25211·0
4013·5	2 Fourth band b^{v}	,,	,,	24908·9	3963·8	3	,,	,,	25221·2
4013·2	1	,,	,,	24910·8	3962·8	2	,,	,,	25227·6
β 4012·0	4s	,,	,,	24918·2	3962·0	2	,,	,,	25232·7
4011·6	4s	,,	,,	24920·7	3960·9	1	,,	,,	25239·7
4010·8	3	,,	,,	24925·7	3959·6	4	,,	,,	25248·0
4010·6	3	,,	,,	24926·9	3958·9	3	,,	,,	25252·4
4009·8	3	,,	,,	24931·9	3957·4	3	,,	,,	25262·0
4009·2	1	,,	,,	24935·6	3956·1	1	,,	7·2	25270·2
4008·6	3	,,	,,	24939·4	3955·7	2	,,	,,	25272·8
4008·0	2	,,	,,	24943·1	3953·5	4	,,	,,	25286·8
4007·1	3	,,	,,	24948·7	3952·3	2	,,	,,	25294·5
4006·3	1	,,	,,	24953·7	3950·6	2	,,	,,	25305·4
4006·1	2	,,	,,	24954·9	3949·0	3	,,	,,	25315·7
4005·2	6	,,	,,	24960·5	3946·7	3	,,	,,	25330·4
4004·4	2	,,	,,	24965·5	3945·2	3	,,	,,	25340·1
4003·9	2	,,	,,	24968·6	3943·0	2	,,	,,	25354·2
4003·1	7	,,	7·1	24973·5	3941·1	2	,,	,,	25366·4
4001·8	3	,,	,,	24981·6	3941·0	1	,,	,,	25367·1
4000·9	2	,,	,,	24987·3	3939·6	3	,,	,,	25376·1
4000·4	4	,,	,,	24990·4	3938·5	2	,,	,,	25383·2
3999·7	2	,,	,,	24994·8	3936·7	1	1·08	,,	25394·8
3998·9	2	,,	,,	24999·8	3935·1	2	,,	,,	25405·1
*3997·3	5	,,	,,	25009·8	3934·6	2	,,	,,	25408·3
3996·1	1	,,	,,	25017·3	3932·7	1	,,	,,	25420·6
3995·6	3	,,	,,	25020·4	3931·9	3	,,	,,	25425·8
3994·0	4	,,	,,	25030·5	3929·9	2	,,	,,	25438·7
3993·9	4	,,	,,	25031·1	3926·9	2	,,	,,	25458·2
3991·8	5	,,	,,	25044·3	3923·9	3	,,	,,	25477·6
3990·9	1	,,	,,	25049·9	3921·8	3	,,	,,	25491·3
3990·1	?	,,	,,	25054·9	3918·9	2	,,	,,	25510·2
3989·9	4	,,	,,	25056·2	3918·1	2	,,	,,	25515·4
3987·6	3	,,	,,	25070·6	3917·6	1	,,	,,	25518·6
3987·3	3	,,	,,	25072·5	3915·8	3	,,	,,	55530·4
3986·0	4	,,	,,	25080·7	3914·6	1	,,	,,	25538·2
3985·4	4	,,	,,	25084·5	3913·2	2	,,	,,	25547·3
3983·3	3	,,	,,	25097·7	3910·3	2	,,	,,	25566·3
3982·4	3	,,	,,	25103·4	3908·4	1	,,	7·3	25578·6
3981·5	4	,,	,,	25109·1	3906·7	3	,,	,,	25589·8
3980·6	3	,,	,,	25114·7	[3906·6	5s, line	,,	,,	25590·4
3980·3	3	,,	,,	25116·6		spec-			
3978·4	3	,,	,,	25128·6		trum]			
3976·9	2	,,	,,	25138·1	3904·3	1	,,	,,	25605·5
3976·6	3	,,	,,	25140·0	3902·2	1	,,	,,	25619·3
3975·4	2	1·09	,,	25147·6	3901·5	2	,,	,,	25623·9
3975·0	2	,,	,,	25150·1	3898·5	1	,,	,,	25643·6
3274·2	1	,,	,,	25155·2	3897·7	3	,,	,,	25648·8
3973·1	4	,,	,,	25162·2	3895·0	2	1·07	7·3	25666·6
3971·2	5	,,	,,	25174·2	3894·0	1	,,	,,	25673·6

MERCURY (BAND SPECTRUM)—*continued.*

Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3892·1	2	1·07	7·3	25685·8	3708·4	1	1·03	7·6	26958·2
3888·1	3	”	”	25712·2	3706·9	1	”	”	26969·1
3887·8	1	”	”	25714·2	3706·4	1	”	”	26972·8
3885·1	1		”	25732·1	3706·0	1	”	”	26975·7
3882·4	2	”	”	25750·0	3705·5	1	”	”	26979·3
3878·0	2	”	”	25779·2	3703·1	1	”	”	26996·8
3876·6	1	”	”	25788·5	3702·6	1	”	”	27000·4
3875·1	2	”	”	25798·5	3700·6	1	”	”	27015·0
3872·4	2	”	”	25816·5	3699·7	1	”	”	27021·6
3870·7	1	”	”	25827·8	3698·8	1	”	”	27028·2
3867·6	3	”	”	25848·5	3697·1	1	1·02	”	27040·6
3864·7	2	”	”	25867·9	3696·1	1	”	”	27047·9
3861·7	1	”	”	25888·0	3695·3	1	”	”	27053·8
3856·6	2	1·06	”	25922·3	3694·8	1	”	”	27057·5
3853·8	1	”	”	25941·1	3694·5	1	”	”	27059·7
3852·2	1	”	”	25951·9	3693·2	1	”	”	27069·2
3850·9	1	”	”	25960·7	3692·3	1	”	”	27075·8
3845·2	1	”	”	25999·1	3690·7	1	”	”	27087·5
3833·2	1	”	”	26080·6	3689·2	1	”	”	27098·5
3830·7	1	”	”	26097·6	3688·2	1	”	”	27105·9
3820·6	1	”	”	26166·6	3686·3	1	”	”	27119·9
3807·3	1	1·05	7·4	26257·9	3686·1	1	”	”	27121·3
&c. &c.	numer-				3684·1	1	”	”	27136·1
	ous faint				3681·6	1	”	7·7	27154·4
	lines				3680·7	1	”	”	27161·0
α 3728·6	2s	1·03	7·5	26812·2	3679·8	1	”	”	27167·7
α 3728·0	1s	”	7·6	26816·4	3676·6	1	”	”	27919·3
3726·2	3 b^v Fifth band	”	”	26829·4	3676·0	1	”	”	27195·8
3725·1	1	”	”	26837·3	3675·1	1	”	”	27202·4
3723·6	1	”	”	26848·1	3671·1	1	”	”	27232·1
3722·6	2	”	”	26855·3	3670·6	1	”	”	27235·8
3722·3	1	”	”	26857·5	3669·9	1	”	”	27241·0
β3721·4	3	”	”	26864·0	&c. &c.	numer-			
3721·1	1	”	”	26866·2		ous faint			
*3720·4	1	”	”	26871·2		lines			
3719·6	3	”	”	26877·0					
3718·3	3	”	”	26886·4	α3500·1	1 b^v 6th band	0·98	8·1	28562·5
3717·0	3	”	”	26895·8	β3495·0	1	0·97	”	28604·2
*3715·9	1	”	”	26903·8					
3715·2	3	”	”	26908·8					
3714·2	1	”	”	26916·1	α3274·5	1 b^v 6th band	0·92	8·7	30530·3
3713·2	3	”	”	26923·3	β3268·1	1	”	”	30590·1
3712·0	2	”	”	26932·1					
3711·0	3	”	”	26939·3	&c. &c.	numer-			
3709·4	1	”	”	26950·9		ous faint			
3708·7	1	”	”	26956·0		lines			

Oxygen Coal-Gas (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 162 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5659	First edge	5634·7 Watts 5635·43 K. & R.	17666·7
5627			17770·7
5611	Second edge	5585·3 ,, 5585·50 ,,	17816
5577			17933
5557	Third ,,	5542·3 ,, 5540·86 ,,	17988·7
5520			18114·3
5492	Fourth ,,	5503·5 ,, 5492·8 Piazzi Smyth	18202
5473	Fifth ,, Greenish-yellow band	5478·4 ,, 5473·0 ,, ,,	18267
5446	Sixth ,,	5440 ,, 5448·8 ,, ,,	18355·5
5422	Seventh ,,	5425 ,, {5434·8, 5423·8} ,, ,,	18442
5399	Eighth ,,		18516
5372	Ninth ,,		18609
5193	Tenth ,,		19252·2
5170	First ,,	5165 ,, 5165·241 Rowland	19336·2
5138	Second ,,	5130·4 ,, 5129·8 Piazzi Smyth	19457·9
5098	Third ,,	5100·0 ,, 5097·9 Fievez	19608
5086	Fourth ,, Emerald-green band	5082 ,, 5086·9 ,,	19957
4952	Fifth ,,	4951·50 K. & R.	20186·7
4899	Sixth ,,	4899·98 ,,	20409
4816	b		20756·8
4774		4775·32 ,,	20940·7
4765		4763·86 ,,	20983·7
4743·5	b	4739·8 Watts 4737·18 K. & R.	21075
4732	b	{4732·33, 4731·93} ,,	21124·4
4720	b Blue band	4717·2 ,, 4715·14 ,,	21181
4702	b	4698·4 ,, {4702·3, 4697·5} ,,	21261
4688	b	4684·2 ,, 4688·20 ,,	21329
4679	b	4677 ,, 4678·9 Fievez	21364
4672		4672·2 Fievez	21399
4462			22408
4405			22703
4395			22748
4378	b	E. 4368 L. de B.	22840·9
4364			22910·4
4350			22979
4342	Fine line	4334·4 Piazzi Smyth	23029
4332			23080·0
4312		4313 Watts 4316·7 Piazzi Smyth 4315·0 Eder	23188
4302			23239
4288	Indigo band	4288·3 Piazzi Smyth 4287·6 Eder	23315·7
4282		4281·8 ,, ,, 4282·0 ,,	23352·0
		4277·8 ,, ,, 4276·4 ,,	
4273		4273·9 ,, ,,	23394
4268		4268·9 ,, ,, 4269·6 ,,	23430
4260		4263·1 ,, ,, 4263·4 ,,	23466·0
4255		4256·0 ,, ,, 4256·9 ,,	23495
4248		4248·1 ,, ,, 4250·7 ,,	23540
4240		4241·0 ,, ,, 4244·3 ,,	23582·9
4230		4234·0 ,, ,, 4238·2 ,,	23642·9
		&c. &c.	

OXYGEN COAL-GAS—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4215		CN 4220 Watts 4216·12 K. & R.	23715
4208		4210 „ 4197·24 „	23766·9
4196		4196 „ 4180·73 „	23829
&c.		&c. &c.	
4003	s		24978
3998	s		25005
3992	s		25045
3984	s		25097·5
3973	s		25169·4
3963	s		25229·1
3954	s		25291
3946	s		25334
3938	s		25384·1
3932	s		25425·3
3926	s		25463·2
3920	s	C 3920·8 Eder and Valenta	25509·0
3913	s		25538
3908	s		25572
3904	s		25606·2
3898	s		25645
3893	b	C 3893·1 Deslandres	25682·1
3882	b	CN 3883·55 K. & R.	25754·2
3868		„ 3871·54 „	25848·2
3856		„ 3855·06 „	25924·9
3846			25994·2
3840		„ 3839·95 „	26033·1
3831		„ 3831·15 „	26093
3825·5		„ 3825·40 „	26134·0
3823		„ 3823·90 „	26150·5
3818·3	b^r	„ 3819·36 „	26183·1
3815		„ 3816·24 „	26206·8
3790			26379
3642·5		„ 3642·63 „	27447
3579·5		„ 3579·22 „	27935
3568·5		„ 3568·40 „	28014
3563		„ 3563·92 „	28059
3544·5		„ 3545·07 „	28204
3528		„ 3528·71 „	28335
3522		„ 3522·49 „	28384·8
3498·5		„ 3497·17 „	28576
3487·8		„ 3487·61 „	28664·4
3478·8			28738
3473·6			28780
3452			28961
3448			28993
3445			29014·3
3441			29054
3437			29082
3402			29387
3394			29453·1
3384			29543
3373			29632
3359		3360·1 Deslandres	29763·0
3349			29858
3336·5			29967·0
3330			30027·0
3321			30103·9

OXYGEN COAL-GAS—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3313			30177·9
3304		3305·3 Deslandres	30257·9
3299			30303·9
3288			30402
3278			30492
3269			30586
3256			30708

OXYGEN-CARBONIC OXIDE FLAMES.

Hartley: 'Phil. Trans.' clxxxv. 176 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
6337	2n		15778
6172	2n		16204
5945	2n	5955·6 Piazzi Smyth	16817
5777	1		17313
5534	2s	5540·86 K. & R.	18065
5473	2s	5473 Piazzi Smyth	18266
5168	2s	5165·3 ,, ,,	19347
5037	1b	5079·5 ,, ,,	19852
4970·5	1b		20114
4945	1b		20218
4640	1b		21549·6
4589	1b		21784
4446	1b		22488
4249	1b		23530·9
4224·5	1b		23669
4183	1b		23897·8

LITHIUM.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 177 (1894).

Wave-length	Oscillation Frequency in Vacuo	Wave-length	Oscillation Frequency in Vacuo
6708·2	14902·7	4132·4	24191·6
4602·4	21721·4	3232·8	30923·7

SODIUM.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 177 (1894).

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6518	b	15336	5688·26	8n	17574·9
6420		15570	5682·9	8n	17587·4
6349		15744	4983·5	6n	20060·2
6290		15894	4979·3	6n	20077·2
6271	b	15942	4669·4	4n	21409·6
6233		16038	4665·2	4n	21428·9
6138	b	16286	3303·07	8s	30265·6
6026	b	16590	3302·47	8s	30271·1
5896·16	10s	16955·2			
5890·19	10s	16972·4			

POTASSIUM.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 178 (1894).

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5832·23	4s	17141·0	4044·29	8s	24718·8
5802·01	6n	17230·3	3447·49	6s	28997·8
5782·67	6n	17288·0	3446·49	8s	29006·2
5353·6	4s	18651·6	3217·76	4s	31068·0
5340·08	4s	18720·7	3217·27	6s	31072·7
4047·36	6s	24700·1			

A strong continuous spectrum from 4610 to 3440.

Cadmium yields one line only (the least refrangible of the triplets at cadmium 17) 3261·17. Oscillation frequency 30654·4.

Zinc and zinc oxide give nothing but a continuous spectrum.

CALCIUM FLUORIDE.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 179 (1894).

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6213·5	b	16090	5352·5	b	18678
6009	b	16638	5316		18807
5739	1b	17420	5316	b	18807
5583·5		17905	5303·5		18850
5583·5	b	17905	4231*	4s	23630
5503		18166			

* Probably Kayser and Runge's Calcium line 4226·91.

Strontium Oxide.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 179 (1894).

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
6085	b	16430	4591	sv ?	21774
6053		16515	*4228	1	23644
5870 ?	line 2s	17032	4216·5	1	23693
*5547	2n	18023	*4079	1	24510
*4609	4s	21691			

* Kayser and Runge record lines in the arc-spectrum of strontium at 5543·49, 4607·52, 4226·91, and 4077·88.

Barium Oxide.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 180 (1894).

Wave-length	Intensity and Character	Oscillation Frequency in Vacuo	Wave-length	Intensity and Character	Oscillation Frequency in Vacuo
5720	2b	17478	5384	b^v	18567
5712		17503	5356		18665
5697		17546	5322	b^v	18784
5690	strong band (overlapping a weak one)	17570	5221		19149
5660		17662	5162	b	19368
5619·5		17790	5089·5		19642
5587	b^v	17895	4932	b	20269
5555		17997	4887		20456
5499		18178	4862·5		20559
5544		18032	4833		20684
5503		18165	4715	b very faint	21202
			4692		21306

Magnesium Oxide.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 181 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3929	b^v		25447
3883			25752
3874			25805
3856	$4b^v$		25929
3852	4s		25955
3834	b^v		26074
3805	$6b^v$		26269
3805	1b (b^v)	Triplet near M and associated bands. L. & D.	26269
3739	2b		26734
3733	3b		26781
3714	4b		26915
3709	5b		26950
3682	$6b^v$		27151
3852	8s	Mg 2852·22 K. & R.	35050

Calcium Oxide.

Oxyhydrogen (Flame Spectrum).

Hartley : 'Phil. Trans.' clxxxv. 182 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
6253	$4b^{v}$		15988
6116			16351
6075	$2b^{v}$		16463
5895			16964
5739	$4b^{v}$		17424
5598	$8b^{v}$	Ca 5594·64 . & R.	17862
5485			18233
5445	$2b^{v}$		18363
5422			18440
5390			18545
5359	b		18660
5341			18724
5322			18791
5304	$2b^{v}$		18852
4222	$8b^{v}$	Ca 4226·91 K. & R.	23681
4215			23717

Phosphorus Pentoxide.

Oxyhydrogen (Flame Spectrum).

Hartley : 'Phil. Trans.' clxxxv. 183 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3279	1s		30488
3274	1s		30535
3271	1s		30563
3268	1s		30591
3255	1s		30713
3245	1s		30808

Arsenic.

Oxyhydrogen (Flame Spectrum).

Hartley : 'Phil. Trans.' clxxxv. 183 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3280	2n		30479

Selenium.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 184 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4890 }			20443·9
4816 }	b^v		20757·8
4804 }			20811
4746 }	b^v	4745 Salet	21064·7
4720 }			21180
4676 }	b^v	4675 Plücker & Hittorf	21381
4643 }			21529
4599 }	b^v		21738
4569·5 }			21878·6
4491·5 }	b^v		22258·2
4407·5	b^v		22682
4339	b^v		23042
4299	b^v		23253·0
4222	b^v		23676·9
4170·5	b^v		23969·8
4124	b^v		24242·4
4093	b^v		24426
4041	b^v		24738
3976·5	b^v		25141·1
3941·5	b^v		25364·3
3921·5	b^v		25500·3
3883	b^v		25744·2
3851	b^v		25958
3827	b^v		26122·2
3796	b^v		26335·4
3749	b^v		26664
3733	b^v		26780
3707	b^v		26994

Tellurium.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 185 (1894).

Wave length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4818	2b	4820 Salet	20749
4760	4b	4767	21001
4702·5	b		21258·6
4668·5	b	4670	21414·6
4648	b		21510
4620·5	b		21635
4593	b		21765
4580	b		21829
4532	b		22048·4
4495	b		22240
4470 }	b	4470	22365
4426 }	b^v		22589
4397	b^v	4400	22735
4379	b^v	4378	22831

TELLURIUM—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4335	2b^{v}		23064·1
4325	1b^{v}	4324·6	23206
4211	3b^{v}		23740·9
4201		4200	23802·8
4179		4180·7 H. & A.	23923
4163	b	4170·3 H. & A.	24012·8
4151·5	b^{v}		24080·8
4130·5	b^{v}		24202·9
4120		4109·7 H. & A.	24265
4107			24340
4098	b		24393·6
4085			24471
4072·5	b^{v}	4072·7 H. & A.	24548·7
4025·6			24835·5
3999	b^{v}		24997·4
3937	b^{v}		25391·3
3880	b^{v}		25768
3769	b^{v}		26526·0
3708·5	b^{v}		26956·9
3661	b^{v}		23710·0
3604	b^{v}		27736
3560	1b^{v}		28083·6
3383·5	4s	3382·4 H. & A.	29547
3281	4s	3280·0 ,,	30469·8
3273	4s	3273·4 ,,	30541
3248	4s	3246·8 ,,	30781·9

ANTIMONY.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 187 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5511	b^{v}		18139
4675·5			21834
4503	b^{v}		22203·4
4399·6	2b^{v}		22740
4273	2b^{v}		23398
4132	2b^{v}		24195·7
4079	2b^{v}		24511
4051	2b^{v}		24676
4038·5	1b^{v}		24754·5
3990	1b^{v}		25056
3949·8	b^{v}		25304
3935·5	b^{v}		25403
3913	b^{v}		25550
3910	b^{v}		25571
3890	b^{v}		25700
3853	b^{v}		25947
3813·5	b^{v}		26215
3778	b^{v}		26462·1
3751·9	b^{v}		26646

ANTIMONY—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3748·5	b^v		26757
3700	b^v		27019
{3686·5	1s		27117·9
{3676	1s		27195·8
3661	$2b^v$		27306
3664	$2b^v$		27434
3626	$2b^v$		27571
3602	$2b^v$		27752
3573	$2b^v$		27981

BISMUTH.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 188 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5805·5			17220
5714·2	s } b^v		17495
5215·7	b^v		17802·4
5549	$1b^v$		18005·8
5422	$1b^v$		18438
5333	$1b^v$		18745
5310·1	$1b^v$		18827
5292	$1b^v$		18890·3
4850·5	$1b^v$		20609
4724·5	$1b^v$		21159
4714·5	8b		21205
4707	s		21241
4691	b^v		21309·6
4672·8	b^v		21394
4632	b^v		21584·5
4582	b^v		21820
4544	b^v		22001·4
4516·5	b^v		22135
4484	b^v		22295
4441·5	b^v		22508
4420	b^v		22619
4399	b^v		22727
4382·5	b^v		22811
7373·5 }	l		22859
4353·5 }			22964
4366	b^v		22898·1
4321·2	s		23134
4255·5	b^v		23492
3872·5	b^v		25816·2
3845	b^v		26001
3752	b^v		26646
3652	b^v		27334·8
3527·9	2s		28342
3517·9	2s		28409
3510 5	2s		28467
3067	4s	Water 3067·2 L. & D.	32592

BISMUTH—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3023·8	2s	Bi 3023·8 H. & A.	33061
2992·2	2s	Bi 2992·2 ,,	33376
2983·1	2s	Bi 2982·9 ,,	33431
2937·5	2s	Bi 2937·5 ,,	34021
2900·2	2s	Ag 2901·6 ,,	34473
2897·2	2s	Bi 2897·2 ,,	34501

LEAD.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 190 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5675	b^v		17616
5620·5	b^v	PbO 5615 Mitscherlich	17786
5585 }			17898·6
5460 }	b	PbO 5460 ,,	18301
5400	b^v		18512·4
5340	b^v	PbO 5328 ,,	18721·4
5241 }			19074
5210 }	b^v	PbO 5220 ,,	19188
5194 }			19247
5140 }	b^v	PbO 5144 ,,	19451·2
5051	b^v		19792
4980·5	b^v	PbO 4993 ,,	20073
4961	2b		20152
4955	2b		20175
4925·5	2b		20296
4914·5	2b	PbO 4913 ,,	20342
4901·5	2b		20396·9
4896	2b	PbO 4880 ,,	20418
4858	2b	PbO 4852 ,,	20579
4824	b^v	PbO 4825 ,,	20722·8
4748	b^v		21054·7
4707	b^v		21237·6
4657	b^v	PbO 4664 ,,	21468
4608	b^v		21696·5
4597·5	b^v	PbO 4593 ,,	21745
4508·5	b^v		22173
4455	s	PbO 4468 ,,	22440
4370·5	b^v	PbO 4381 ,,	22875
4314·5	b^v		23171
4225·5	b^v		23659
4163	b^v		24015
4140·5	b^v		24145·7
4059	6s	Pb { 4062·5 Liveing and 4058·5 Dewar	24631·6
4028	b^v		24819
3985	b^v		25070
3954	b^v		25283
3913	b^v		25547·3
3880	b^v		25766

LEAD—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3839	b^v		26043
3805	b^v		26275
3783	b^v		26431
3740·5	b^v		26727
3715·5	b^v		26906
3684	8s		27138
3671·5	$1b^v$		27229
3655	$1b^v$		27349
3639·5	8s		27469
3610	b^v		27691
3594	b^v		27817
3592·5	b^v		27828·6
3571	b^v		27993·6
3555	b^v		28119
3501·5	b^v		28552
3486	b^v		28677
3447	$2b^v$		29004
3431·5	$2b^v$		29133
3405	b^v		29359
3368	$1b^v$		29686
3352·5	$1b^v$		29820
3345	$1b^v$		29890
3320	$1b^v$		30111
3307	b^v		30226
3304	b^v		30260·9
3264	b^v		30626
3209·5	$2b^v$		31148
(2832·2)	2s		35284

TIN.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxvi. 193 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4668	b^v		21416
4656	b^v		21472
4609	$2b^v$	4600 Salet	21689·5
4557	$2b^v$		21939
4532	$2b^v$		22062
4505·5	$2b^v$		22189
4456	b^v		22543
4454	b^v		22444·3
4369	$2b^v$		22882
4347	$2b^v$		22997·4
4305	b^v		23222
4265	b^v		23439
4243	b^v	4240 Salet	23562·9
4221·5	b^v		23681
4128	b^v		24220
4119	b^v		24271
4089	b^v	4080 Salet	24448·6

TIN—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4033	b^{v}		24786·5
3981	b^{v}		25113
3955	b^{v}		25278
3907	b^{v}		25588
3871	b^{v}		25828
3841	b^{v}		26048
3827	b^{v}		26125
3810	b^{v}		26237
3787	2b^{v}		26416
3761	2b^{v}		26581
3727	8b^{v}		26822
3696	8b^{v}		27046
3618	2b^{v}		27632
3590	6b^{v}		27849
3547	2b^{v}		28182
3490	6b^{v}		28645
3451	2b^{v}		28969·3
3421	4b^{v}		29220
3394	4b^{v}		29454·1
3329·5	8b^{v}		30028·0
3298·5	2b^{v}		30307
3268	6b^{v}		30593
3234·5	4b^{v}		30906
3206	5b^{v}		31181·6
3179	6b^{v}		31452
3095	4b^{v}		32301
3068·6	4b^{v}		32573
3038·8	1b^{v}		32998
3031	1b^{v}		33177·0
2989	1b^{v}		33444

SILVER.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 195 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5556·7	1s	5556·6 Thalén	17791·7
5515·0	1s	(Ångström)	18127·6
5483·7	1s	5486·6 ,,	18231
5463·4	1s	5465·66 K. & R.	18298·6
4696·0	1st band	4669 L. de B.	21288
4650·8			21496·4
4616·5	2nd band	4622 L. de B.	21657
4591·0			21775·6
4563·4	3rd band	4570 L. de B. (Ångström)	21907·3
4533·4			22050·7
4519·0	4th band	4518 L. de B.	22123·1
4490·9			22262·0
4470·9	5th band	4475·1 Thalén	22361·3
4449·8			22467
4424·8	6th band		22594
4408·6			22677·0

SILVER—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4396·2	7th band	4396 L. de B. (Ångström)	22741
4373·5			22859
4360·7	8th band		22926
4347·0			22998·2
4330·9	9th band		23084
4300·5			23246·0
4294·7	10th band		23278·1
4283·2			23341
4273·9	11th band		23392
4258·0			23478·3
4244·9	b		23529
4238·2			23588
4231·0			23628
4176·4	b		23937·5
4156·4			24052·7
4147·4			24105
4102·0	2s		24372
4091·0	2s		24437·6
4088·0	2s		24455
4030·3	s		24810
3795·4	1s		26340
3775·2	1s		26481
3712·7	1s		26926
3672·0	1s		27224
3631·5	2s		27529·4
3576·5	2s		27952
3539·5	2s	3541·3 H. & A.	28245·4
3518·4	2s		28413·5
3510·0	2s bᵛ 1st group		28481·3
3453·0	1s		28952·3
3450·7	2s		28971·1
3448·0	3s		28987
3446·7	4s		29005
3445·1	5s		29019
3441·1	6s		29052·5
3436·5	7s		29090·4
3432·3	8s		29127
3431·8	s bᵛ 2nd group		29131
3421·8	s		29216
3418·5	s		29244·2
3418·1	s		29248
3415·1	s		29274
3410·5	4s		29313
3407·0	5s		29343·5
3403·2	6s		29375·4
3401·0	7s		29394·9
3397·8	8s		29423·1
3395·0	s		29447
3392·5	s bᵛ 3rd group		29469
3389·4	s		29496
3386·2	s		29523·9
3383·5	8s	3383·0 K. & R.	29547
3381·7	s		29563
3378·4	s		29592·2
3374·7	s		29625·1
3371·1	s		29656
3366·3	s		29698
3362·2	s		29735·1

SILVER—*continued.*

Wave-length	Intensity and Character		Previous Measurements	Oscillation Frequency in Vacuo
3359·5	s			29758
3358·2	s			29770
3357·7				29775
3354·8	s	Third group		29809·7
3350·0	3s	(of 19 lines)		29843
3347·2	4s			29877·2
3347·0	5s			29879·0
3341·6	6s			29917·1
3336·4	1n			29964·7
3333·8	1n			29987
3331·7	1n	Fourth group		30007
3330·4	1n	(of 6 lines)		30019
3328·4	1n			30036·0
3327·4	1n			30043·0
3319·9	b^v			30112
3315·3	b^v			30154
3309·2	b^v			30209·7
3305·5	b^v	Group of		30243·6
3297·3	b^v	9 narrow		30319·9
3293·5	b^v	bands		30344·9
3289·2	b^v			30393·9
3285·5	b^v			30428
3282·1	b^v			30459
3276·4	$8b^v$		3280·80 K. & R.	30512
3271·3	2s			30560·5
3269·3	s			30579

IRON.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 199 (1894).

* Double. † Present also in the spectrum of ferric oxide.

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
5927·7		5930·25 K. & R.	16865
5738·5	1b		17421
5689·8			17570
5689·8	b		17570
5619·4	b		17790
5594·3	b		17870
5537·1	b		18055
‖5385	b		18565
5324·8		5324·31 ,,	18775
5266·5		5266·72 ,,	18983·3
4479·3		4479·73 ,,	22319
4459·7		4459·24 ,,	22417
4426·7		4427·44 ,,	22584
4405·7		4404·88 ,,	22692
4384·0		4383·70 ,,	22804
4376·8		R4376·04 ,,	22842
4326·2		R4325·92 ,,	23109
G4308·5		R4307·96 ,,	23204
*4272·4		4271·93 ,,	23400

‖ Due to Manganese. R. A line marked R is one of Rowland's 'normal' lines.

IRON—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4266·9		R4267·97 K. & R.	23430
4071·5		4071·79 ,,	24555
4058·3		4058·30 ,,	24633·6
4052·4		5052·75 ,,	24669·8
4047·5		4045·90 ,,	24700
4031·7		4030·84 ,,	24796
4019·8		Mn	24869·5
4002·9		4005·33 ,,	24975
3996·8		{ 3998·16 ,, 3997·49 ,,	25013
†3980·6		3981·87 ,,	25115
†3926·6		3928·05 ,,	25458·3
†3921·1		3923·00 ,,	25496
3915·7		R3916·82 ,,	25531
3904·2		{ 3904·00 ,, 3903·46 ,,	25606
†3900·4		3899·80 ,,	25631·2
3897·8		3898·05 ,,	25648
†3896·5		3895·75 ,,	25657
3894·6		3894·09 ,,	25669
3891·5		{ 3892·02 ,, 3890·96 ,,	25690·2
†3888·2		3888·63 ,,	25711
3885·1		{ 3886·38 ,, 3885·61 ,,	25732
3880·2			25765
†3877·6		3878·82 ,,	25782·4
3874·3		3873·88 ,,	25804
†3860·5		3860·03 ,,	25896
†3858·9		3859·49 ,,	25907
3853·7 }		3854·51 ,,	25941
3845·4 }		3846·96 ,,	25998
3841·4 }		3841·19 ,,	26025
3839·1 }		3840·58 ,,	26040
3835·2 }		{ 3836·48 ,, 3834·37 ,,	26067
†3825·9 }		3826·04 ,,	26130
3821·5		} 3821·32 ,,	26159
†3821·2			26163
L3819·7		3820·56 ,,	26172·2
3810·6		3810·89 ,,	26235·1
3808·1		3808·86 ,,	26252
3796·1		3795·13 ,,	26335·1
3785·2		3786·07 ,,	26410·9
3772·6		3773·84 ,,	26497·3
3765·3		3767·30 ,,	26548
3763·3		3763·90 ,,	26565
†3757·9		3758·36 ,,	26599
3751·9		3751·97 ,,	26645·0
3749·4		3749·61 ,,	26668
3748·1 }		3748·39 ,,	26672
3747·6 }		R3747·09 ,,	26676
3743·5		{ 3745·67 ,, 3743·45 ,,	26705·0
†3736·9		3737·27 ,,	26748
3735·5		3735·00 ,,	26763
M3728·2 }		3727·78 ,,	26815
3727·9 }		3727·13 ,,	26817

IRON—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
3722·3		3722·69 K. & R.	26857
†3720·2		3720·07 ,,	26872
3705·5		3705·70 ,,	26969
3688·5		3687·77 ,,	27095
3685·8		3687·58 ,,	27134
3681·6		3680·43 ,,	27154
3648·6		3647·99 ,,	27399
3631·0		3631·62 ,,	27542
3609·2		3608·99 ,,	27692
N†3581·1		3581·32 ,,	27909
3569·6		3570·23 ,,	27997
3565·0		3565·50	28020
3531·2			28320
3501·8		3500·64 ,,	28559
†3492·3		3490·65 ,,	28622
3475·5		{ 3476·75 ,, 3475·52 ,,	28752
3460·9		3460·02 ,,	28827
O3440·8		3441·07 ,,	29045
†3400·2		3440·69 ,,	29060
3059·1		3059·19 ,,	32680
S3047·4		3047·71 ,,	32806
3039·1		3040·54 ,,	32896
T†3021·1		{ 3021·15 ,, 3020·70 ,,	33091

NICKEL.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 203 (1894).

* Also in the spectrum of the flame of nickel tetra-carbonyl.

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
*3859		3857·8 L. & D.	25893
*3809		3806·6 ,,	26248
*3784		3783·0 ,,	26419
*3776		3775·0 ,,	26478
*3619		3618·8 ,,	27620
*3611		3609·8 ,,	27687
3599		3597 ,,	27777
*3574		3572 Cornu	27972
*3569		3570·8 ,,	28012
3527		3527·1 L. &. D.	28339
3518		3519·1 ,,	28417
3513		3514·4 ,,	28459
3503		3501·8 ,,	28539
3496		3492·3 ,,	28599
3487		3485·2 ,,	28667
3475		3470·8 ,,	28769
3462		3461·1 ,,	28870
*3460		3457·9 ,,	28892
3453		3452·9 ,,	28954
*3445		3445·7 ,,	29017

NICKEL—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
*3436		3437·7 L. & D.	29097
*3433		3433·0 „	29123
*3423		3423·1 „	29205
*3415		3413·8 „	29276
*3392		3392·4 „	29469
*3391		3390·4 „	29484
*3381		3380·0 „	29565
*3370		*3371·3 „ 3368·9 „	29665
*3316		3315·1 „	30148
*3233		3232·6 „	30925

COBALT.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley: 'Phil. Trans.' clxxxv. 204 (1894).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
4119		4120 Huggins	24270
3996		3397·3 L. & D.	25019
3899		3905·2 „	25633
3875		3873·2 „	25797
3847·5		3844·8 „	25983
3819·5			27620
3612		3611·3 „	27680
3603		3601·6 „	27747
3596		3594·4 „	27797
3578		3574·9 „	27942
3571		3568·9 „	27992
3536		3532·8 „	28272
3531		3529·3 „	28312
3529		3528·4 „	28327
3527			28344
3517		3517·7 „	28429
3513		3512·0 „	28459
3509·5		3509·7 „ 3509·3 „	28487
3504		3502·0 „	28529
3496		3495·1 „	28599
3483		3482·7 „	28702
3468		3465·2 „	28827
3463		3462·2 „	28870
3461		3460·6 „	28887
3454		3452·9 „	28945
3449		3448·9 „ 3448·6 „	28987
3443		3443·0 „	29037
3432		3432·9 „ 3432·4 „	29129
3415		3414·2 „	29277
3413		3412·0 „ 3411·7 „	29292
3409		3408·6 „	29328
3405		3404·5 „	29357

Chromium.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 205 (1894).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
4290	s	4289·87 Hasselberg	2330
4277	s	4274·91 "	2337
4255	s	4254·49 "	2349
3607	s	3605·46 "	27716
3595	s	3593·57 "	27802
3580	s	3578·81 "	27927

Aluminium.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 207 (1894).

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
4042	s		24733
3968·3	s		25193
3953·5	s		25287

Copper.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 207 (1894).

Wave-length	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
5506·5	b		18155
5080	2s		19679
3290	b	3289·9 H. & A.	30389
3262·5	b	3265·2 " 3260·2 "	30643

Copper Oxide.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 208 (1894).

Wave-length	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
5840	1n		17120
5790	2n		17267
5747	4b^{r}		17397
5577	5b	5563 L. de B.	17934
5356		5355 "	18667
5296	b^{r}	5300 "	18875
5241	b^{r}	5239 "	19077
5183	b^{r}	5150 "	19293·2

Copper Oxide—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Angström)	Oscillation Frequency in Vacuo
5107	b^v	5106 L de B.	19582
4957	b^v	4945 „	20167
4849	b^v	4847 „	20616
4777	b^v	4757 „	20926
4712	b^v	4704 „	21219·7
4688	b^v		21324
4644	b^v	4659 „	21525·6
4518	b^v	4522 „	22128
4456	b^v	4436 „	22438
4379	b^v	4353 „	22833
4328	b^v	4331 „	23099
4280	b^v	4281 „	23355·0
4228	b^v	4217 „	23643
4096	1s		24405
4080	1s		24507·6
4069	1s		24569
4053	1s		24664
4040	1s		24743
4031	1s		24802
4017	1s		24888
3282	4b		30452·8
3256	4b		30697

Manganese.

Oxyhydrogen (Flame Spectrum).

Hartley: 'Phil. Trans.' clxxxv. 1029 (1895).

* Seen also in the spectrum of manganese oxide.

Wave-length	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
*5855	$2b^v$	Fe 5856·24 Kayser & Runge	17073
5813	s		17197
5800	s	Fe 5800·21 „ „	17237
5764	$1b^v$		17345
5730	$1b^v$		17446
5712	$1b^v$ very weak		17503
5692	b^v		17563
*5622	b^v	Fe 5624·70 „ „	17781
5598	3b		17858
*5591	b^v	Fe 5592·6 „ „	17881
*5571	s	Fe 5573·05 „ „	17945
5556	b^v		17995
5532	s		18072
5500	s		18175
*5478	s	Fe 5476·82 „ „	18250
5465	b^v		18293
*5445	s	Fe 5447·05 „ „	18360
*5438	s		18385
*5402	$4b^v$		18505
*5391	b	Fe 5393·30 „ „	18543

MANGANESE—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
*5370·5	4b^v	Fe 5371·62 Kayser & Runge	18615
5364	s		18637
*5347	b^v weak		18698
*5315	,,	Fe 5316·85 ,, ,,	18810
*5270	b^v	Fe 5270·04 ,, ,,	18968
*5235	b^v	Fe 5233·05 ,, ,,	19095
*5199	b^v	Fe 5198·82 ,, ,,	19230
*5166	b^v	Fe 5167·50 ,, ,,	
*4830	s	Fe 4832·84 ,, ,,	20696
*4791·5	s		20864
*4762	s	Mn 4762·2 Thalén	20992
*4064	s	Mn 4063·6 Thalén, Fe 4063·63 K. & R.	24598
*4056	s	Mn 4055·5 Thalén	24649
*4049·5		Mn 4049·0 Thalén	24687
*4041·3		Mn 4041·6 Thalén	24735
*4036·5	s } 8b^v	Mn 4035·6 Cornu; Fe { 4035·76 K. & R.	24766
*4029·5	n } 8b^v	Mn 4030·6 ,, ; Fe { 4033·16 ,, ; 4030·84 ,,	24810
*3894 ?	s	Fe 3895·75 K. & R.	25676
*3874	s		25808
*3860	s	Fe 3860·03 ,,	25898
*3847	s		25985
*3835	s	Fe 3834·37 ,,	26070
3827	s		26125
*3824	s	Fe 3824·58 ,,	26143
*3808	s	Fe 3805·47 ,,	26255
*3803	1s		26289
3764	2s		
*3621	1s	Fe 3621·61 ,,	27607
*3612			27677
*3607·5		Fe 3608·99 ,,	27712
*3604	s		27737
*3600	4s		27792
*3589	s		27852
*3587	s		27870
*3578	2s		27937
*3576	s		27954
*3571	s		28000
*3568	s	Fe 3570·23 ,,	28020
*3566	s weak	Fe	28037
*3562	s doubtful		28067
*3549	s ,,		28167
*3543	s ,,		28217
*3536	s ,,		28274
*3534	s ,,		28288
*3533	s ,,		28299
*3530·5	s ,,		28317
*3529·5	s ,,		28322
3528	s ,,		28342
*3525	s ,,		28358
*3524	s ,,		28367
3515·5	s ,,		28437
3514·5	s ,,		28447
*3513	s ,,		28454
*3511	s ,,		28475

MANGANESE—*continued.*

Wave-length	Intensity and Character	Previous Measurements	Oscillation Frequency in Vacuo
*3507	s doubtful		28504
*3503	s „	Fe 3500·64 K. & R.	28537
*3498	s „		28577
*3497	s „	Fe 3497·92 „	28587
*3493·5	s „		28617
*3485	s „		28685
*3476	s „	Fe 3476·75 „	28762
*3473·5	s „		28782
*3472	s „		28792
*3470·5	s „	Fe 3471·40 „	28806
*3468	s „	Fe 3468·92 „	28824
*3467	s „		28834
*3465	s „	Fe 3465·95 „	28852
*3464·5	s „		28885
*3461	s „	Fe 3460·02 „	28884
*3457	s „	Fe 3458·39 „	28921
*3453	s „	Fe 3453·10 „	28954
*3448	s „		28999
*3442	s „	Fe 3441·07 „	29047
*3437	b^v		29085
*3434			29110
*3431	b^v		29140
*3419	b^v		29237
*3418	b^v		29250
*3415	b^v	Fe 3417·92 „	29272
*3413	b^v		29290
*3410	b^v		29318
3406	b^v		29354

MANGANESE OXIDE.

OXYHYDROGEN (FLAME SPECTRUM).

Hartley : 'Phil. Trans.' clxxxv. 1033 (1895).

* Seen also in the spectrum of the metal manganese.
† Bands peculiar to the *oxide* of manganese.

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
5873	b^v		
δ *5856	b^v	5858 Lecoq de Boisbaudran	17023
		Fe 5856·2 K. & R. (Rowland)	17071
5827	b		17155
5800	2b^v	5807 L. de B.	
		Fe 5800·21 K. & R. (Rowland)	17235
5752	3b^v	5759 L. de B.	17380
5717	3b^v	5719 „	17485
α 5681	3b^v	5683 „	17598
5645	b^v indistinct	5644 Watts	17700
*5622	s	Fe 5624·70 K. & R. (Rowland)	17782
5607	b^v	5607 Watts	17830
*5591	b^v	Fe 5591	17880
5586	b^v	5587 L. de B.	17897

MANGANESE OXIDE—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Ångström)	Oscillation Frequency in Vacuo
β *5575	2b^v	Fe 5573·05 K. & R. (Rowland).	17932
β *5474		5473 L. de B.	
β *5443·5	n	Mn 5543·1 Thalén	18365
β *5438	n		18383
β 5432	b^v	5433 Watts, 5432 Huggins	18404
β 5427	b^v	5427 L. de B.	18420
β *5405	4s	Mn 5406·6 Thalén	18495
β *5400	4b^v	Mn 5399·9 Thalén, 5398 L. de B.	18513
β *5368·5	b^v	5367 L. de B.	18622
*5347	1b^v	Mn 5348 Huggins	18697
*5318	1b^v	Fe 5316·85 K. & R. (Rowland).	18795
*5271	2b^v	(E_1) Fe 5270·43 K. & R. (Rowland)	18965
*5234	3b^v	Mn. 5233·8 Thalén, (E_2) Fe 5269·65 K. & R. (Rowland).	19100
*5197	4b^v	Fe 5198·82 K. & R.	19236
*5163	2b^v		19362
5055	2b^v		19775
5018	2b^v		19922
4976	2b^v		20090
4935	s		20257
4896	Edge of band	doubtful	20417
4853	Edge of band	doubtful	20599
*4828	n	Fe 4832·84 K. & R. (Rowland).	20704
*4790	n		20869
4776·5	1b		20929
4770	1b		20959
*4762	s	Mn 4761·3 Thalén	20992
4749·5 †	2b^v		21049
4696 †	1b^v		21287
4656 †	1b^v		21470
4600 †	Doubtful		21734
4575 †	4s		21851
4491 †	1b^v	Mn 4491·1 Thalén	22261
4457 †		Mn 4457·6 „	22430
4403 †	b^v		22707
4293 †	b^v		23287
4273 †	b^v	Mn 4271·6 Thalén	23394
4252 †			23513
&c. &c.	Imperfect edges	as far as 4226	
4226 †		Mn 4227·0 Thalén	23657
4135 †	b^v		24173
4133 †	b^v	Fe 4132·15 K. & R. (Rowland).	24189
4130 †	b^v		24208
4125·5 †	b^v		24231
4121 †	3n		24257
4079	4n	Mn 4079·6 Ångström	24507
4075	2n		24531
4065	1n		24593
*4062	1n	Fe 4063·63 K. & R. (Rowland).	24610
*4054·5	4s	Mn 4054·3 Thalén	24657
*4049†	4s	Mn 4048·7 Cornu	24692
*4040†	4s	Mn 4040·6 „	24743
*4037	4b^v strong		24763
*4025	4b^v strong		24838
3994	4s strong		25029

MANGANESE OXIDE—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
3991	4s	Mn 3991·7 Lockyer (Ångström).	25048
3988	2s	Mn 3989·2 ,,	25070
*3894	4s	Fe 3895·75 K. & R.	25675
3886	1s	Fe 3886·38 ,,	25728
3882	1s		25753
3878	1s	Fe 3878·82 ,,	25778
*3873	4s		25810
3869	1s		25837
3866	1s		25858
*3860	1s	Fe 3860·3 ,,	25900
*3846	2s		25993
3842	2s	Fe 3841·19 ,,	26023
*3833 5	5s	Fe 3834·37 ,,	26078
*3824	6s	Fe 3824·58 ,,	26144
*3809	1s		26243
*3806·5	1s	3806·4 Cornu (Ångström).	26263
3752 } †			26645
3728 } †			26816
3721 } †	2b	Fe 3727·78 K &. R.	26867
3715 } †			26907
3670 } †	2b		27242
3661 } †			27306
3623 } †	2b		27596
*3621 } †		Fe 3621·61 ,,	27607
*3612	2n		27677
*3609	2n	Fe 3608·99 ,,	27700
*3603	2s	Fe 3605·62 ,,	27745
*3600	2s		27800
*3588	1s		27862
*3587	1s		27872
*3578	2s		27940
*3576	3s		27957
*3570	4s	Fe 3570·23 ,,	28005
*3564	1bᵛ	Fe 3565·50 ,,	28049
*3561·5 }	1b		28072
*3559·5 }			28086
3553	1bᵛ		28135
*3548	4s		28175
*3541·5	1n		28228
*3539	1n		28246
*3533	1s		28297
*3532	2s		28305
3530	3s		28322
*3528·5	1s		28331
*3526	4s	Fe 3526·51 ,,	28350
*3524	2s		28366
3523	2s		28375
3521	2s		28392
3520	2s		28400
3518	1s		28417
3513·5	3s		28452
*3513	2s		28459
*3510	2s double		28479
*3506	4s		28512
*3502	8s	Fe 3500·64 ,,	28544

MANGANESE OXIDE—*continued.*

Wave-length	Intensity and Character	Previous Measurements (Rowland)	Oscillation Frequency in Vacuo
*3498	1n		28582
*3496·5	1n	Fe 3497·92 K. & R.	28592
3494	1n		28614
3492·5	1n		28624
3490·5	1n	Fe 3490·65 „	28642
3488·5	1n		28657
3487	1n		28670
*3485	1n		28686
3484	1n		28695
3482·5	1n		28707
3481	1n		28722
3478·5	1n		28741
3477	1n	Fe 3476·75 „	28754
*3475 }	4s	Fe 3475·52 „	28766
*3474 }			28779
*3471	2s		28799
*3470	2s	Fe 3471·40 „	28812
*3468	4s	Fe 3468·92 „	28830
*3466	1s		28841
*3465	2s	Fe 3465·95 „	28852
*3463·5	2s		28864
*3462	1s	Fe 3460·02 „	28875
3460·5	2s		28889
*3456	8s	Fe 3458·39 „	28927
*3451	1s	Fe 3453·10 „	28970
*3449			28986
3447	b^v		29005
3445	2b^v		29020
3444	2s		29030
*3441	2s	Fe 3441·07 „	29051
3439	2s		29070
*3437 }	n		29088
*3433·5 }			29117
*3430	b^v		29148
*3417·5	1s		29252
*3415	s	Fe 3415·61 „	29277
*3413	8s		29294
*3410	1s		29315
3409	1s		29324
3405	8s		29360
3406	8s		29402
3395	8s		29446
3391	8s		29484
3388	8s		29508

Helium.

Runge and Paschen: ‘Astrophys. Jour.’ January, 1896.

Wave-length (Spark)	Intensity and Character		Remarks	Oscillation Frequency in Vacuo
11170	15	2*	Bolometric measurement.	8951
7066·00	< 1			
7065·48	5	3§	χ not coincident with the argon line, 7065·5 Crookes.	14197·33
5876·209	1			
5875·870	10	3†	χ (D_3), 5876·0 Crookes.	17014·13
4713·475	< 1		χ 4713·4 Crookes.	
4713·252	3	4§		21210·94
4471·858	< 1			
4471·646	6	4†	χ 4471·5 „	22356·97
4121·143	< 1		4121·3 „	
4120·973	3	5§		24259·39
4026·512	< 1			
4026·342	5	5†	χ 4026·1 „	24829·56
3888·785	10	3*	χ 3888·5 „	25707·82
3867·766	< 1			
3867·613	2	6§	3867·7 „	25848·55
3819·751	4	6†	χ 3819·4 „	26172·57
3733·142	< 1			
3733·004	1	7§	χ 3732·5 „	26780·61
3705·287	< 1			
3705·151	3	7†	χ 3705·4 „	26981·92
3652·269	< 1			
3652·121	1	8§		27373·71
3634·523	< 1			
3634·393	2	8†	3633·3 „	27507·43
3599·610	< 1			
3599·472	< 1	9§		27774·08
3587·570	< 1			
3587·426	2	9†	3587·0 „	27867·34
3563·125	< 1	10§		28057·39
3554·725	< 1			
3554·594	1	10†		28124·73
3536·963	< 1	11§		28264·92
3530·646	< 1	11†		28315·49
3517·48	< 1	12§		28421·47
3512·65	< 1	12†		28460·56
3502·47	< 1	13§		28543·27
3498·78	< 1	13†		28573·37
3490·77	< 1	14§		28638·93
3487·87	< 1	14†		28662·74
3481·6		15§		28714·37
3479·10	< 1	15†		28735·00
3471·93	< 1	16†		28794·33
3466·04	< 1	17†		28843·27
3461·4 ?	< 1	18†		28881·93
3456·9 ?	< 1	19†		28919·43
3187·830	8	4*	3187·3 „	31360·41
2945·220	6	5*	2944·9 „	33943·59
2829·173	4	6*		35335·82
2763·900	2	7*		36170·28
2723·275	1	8*		36709·83
2696·230	< 1	9*		37078·04
2677·2	< 1	10*		37341·58
2663·3	< 1	11*		37536·45

The lines marked * belong to the 'principal series'; their oscillation frequencies are given by the formula $\frac{1}{\lambda} = A - \frac{B}{n^2} - \frac{C}{n^3}$, where $A = 38455{\cdot}324$, $B = 109891{\cdot}9$, and $C = 14507$; the figure preceding the * shows the value of n.

The lines marked † belong to the 'first subordinate series,' for which $A = 29224{\cdot}35$, $B = 109836{\cdot}3$, and $C = 167$.

The lines marked § belong to the 'second subordinate series,' for which $A = 29197{\cdot}967$, $B = 106152{\cdot}4$, and $C = 86560$.

χ seen in the chromosphere.

Par-Helium.

Runge and Paschen: 'Astrophys. Jour.' January, 1896.

Wave-length (Spark)	Intensity and Character		Remarks		Oscillation Frequency in Vacuo
20400	10	2*	Bolometric measurement.		4901
7281·81	3	3§			13729·13
6678·37	5	3†	χ 6678·1 Crookes.		14969·65
5047·816	2	4§	5047·1	,,	19805·12
5015·732	6	3*	χ 5015·9	,,	19931·81
4922·096	4	4†	χ 4922·6	,,	20310·98
4437·718	1	5§	χ 4437·1	,,	22527·89
4388·100	3	5†	4386·3	,,	22782·63
4169·131	1	6§	4169·4	,,	23979·18
4143·919	2	6†	4143·9	,,	24125·07
4024·136		7§	4024·15	,,	24843·16
4009·417	1	7†	4009·2	,,	24934·37
3964·875	4	4*	χ 3964·8	,,	25214·48
3936·064	< 1	8§			25399·04
3926·678	1	8†			25459·75
3878·330	< 1	9§			25777·12
3871·954	< 1	9†			25819·57
3838·240	< 1	10§			26046·36
3833·710	< 1	10†			26077·13
3819·899	< 1				
3805·900	< 1	11†			26267·68
3787·64	< 1	12§			26394·31
3785·031	< 1	12†			26412·50
3770·72	< 1	13§			26512·74
3768·95	< 1	13†			26525·24
3756·24	< 1	14†			26614·95
3613·785	3	5*	3613·7	,,	27664·09
3447·734	2	6*	3447·8	,,	28996·41
3354·667	1	7*	3353·8	,,	29800·82
3296·900	< 1	8*			30322·96
3258·336	< 1	9*			30681·83
3231·327	< 1	10*			30938·28
3211·626	< 1	11*			31128·06
3196·81	< 1	12*			31272·32
3176·6 ?	< 1	14*			31471·27

The lines marked * belong to the 'principal series,' for which in the formula $\frac{1}{\lambda} = A - \frac{B}{n^2} + \frac{C}{n^3}$, $A = 32029{\cdot}86$, $B = 109537$, and $C = 1963{\cdot}6$.

The lines marked † belong to the 'first subordinate series,' for which in the formula $\frac{1}{\lambda} = A - \frac{B}{n^2} - \frac{C}{n^3}$, $A = 27175{\cdot}16$, $B = 109758{\cdot}7$, and $C = 272{\cdot}6$.

The lines marked § belong to the 'second subordinate series,' for which in the formula $\frac{1}{\lambda} = A - \frac{B}{n^2} - \frac{C}{n^3}$, A = 27168·595, B = 108825·6, and C = 35960.

See also Crookes, 'Chem. News,' August 23, 1895, and 'Nature,' August 29, 1895. Besides the lines noted above, Crookes gives as lines probably belonging to Helium 5062·15, 4870·6, 4847·3, 4805·6, 4735·1, 4658·5, 4579·1, 4559·4, 4544·1, 4520·9, 4511·4, 4435·7, 4428·1, 4424·0, 4399·0, 4378·8, 4371·0, 4348·4, 4333·9, 4298·7, 4281·3, 4271·0, 4258·8, 4227·1, 4198·6, 4189·9, 4181·5, 4178·1, 4157·6, 4044·3, 4012·9, 3962·3, 3948·2, 3925·8, 3917·0, 3913·2, 3890·5, 3885·9, 3874·6, 3800·6, 3642·0, 3627·8, 3247·5, 2536·5, 2479·1, 2446·4, 2419·8, of which only 4258·8, 4012·9, 3890·5, and 3885·9 were present in all the samples of gas examined.

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APPENDIX H.

NOTE.—Unless otherwise stated, all wave-lengths are upon Rowland's scale in air of about 20° C. and 760 mm. pressure. All oscillation frequencies are in vacuo.

ARGON (VACUUM TUBE).

Eder and Valenta : 'Anzeiger Wien. Akad.,' xxi. (1895).
,, ,, 'Sitz. d. k. Akad. d. W. Wien,' civ. (1895).
,, ,, 'Denkschr, d. k. Akad. d. W. Wien,' lxiv. (1896).
Kayser : 'Astroph. J.' iv. i. (1896) ; 'Sitz. Akad. W. Berlin,' xxiv. (1896).
Crookes : 'Chem. News,' lxxi. 58 (1895).

RED SPECTRUM OF ARGON.

Wave-length		Intensity	Previous Observations		Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)				$\lambda +$	$\frac{1}{\lambda} -$	
7723·4		2			2·09	3·5	12942·1
7635·6		2	7646	Crookes	2·06	,,	13093·0
7515·1		2			2·04	3·6	13302·9
7503·4		2	7506	,,	2·03	,,	13323·2
7383·9		2	7377	,,	2·01	3·7	13539·3
7271·6		1	7263	,,	1·97	,,	13748·4
7146·8		1			1·95	3·8	13989·5
7066·6		7	7056·4	,,	1·92	,,	14147·3
7029·2		1			1·91	,,	14222·6
6964·8		8	6965·6	,,	1·89	3·9	14354·0
6937·8		1			1·88	,,	14409·9
6870·6		1			1·86	,,	14550·8
6786·5		1			1·84	4·0	14731·1
6752·7		3	6754	,,	1·83	,,	14804·9
6676·5		3	6664	,,	1·81	,,	14974·7
6415·2		5	6407	,,	1·74	4·2	15583·8
6384·5		2	6377 ?	,,	,,	,,	15658·7
6368·0		1			1·73	,,	15699·3
6307·8		1			1·72	4·3	15849·1
6296·8		2	6302 ?	,,	1·71	,,	15876·8
*6217·5		1			1·69	4·4	16079·2
6212·5		2	6210	,,	,,	,,	16092·2
*6172·9		2	6173	,,	1·68	,,	16195·4
6170·3		1			,,	,,	16202·3
6155·2		1			,,	,,	16242·0*a*
6145·6		2	6143	,,	1·67	,,	16267·3*a*
6106·1		2	6099	,,	1·66	,,	16372·7*a*
6098·8		1			,,	,,	16392·3*a*
6059·5		4	6056	,,	1·65	4·5	16498·5*a*
6052·7		2			,,	,,	16517·1*a*
6043·0	6043·68	4	6045	,,	,,	,,	16541·7*b*
6031·5	6032·69*	5	6038	,,	1·64	,,	16571·8*b*
6025·8		1			,,	,,	16590·8*a*

* Common to both 'red' and 'blue' spectra.
† A constituent of the third or 'white' spectrum of argon.
‖ Belongs to Mercury.

RED SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$−	
4300·249	4300·18	8	4300·5 Crookes	1·18	6·5	23248·5*ab*
	4288·06	1		,,	,,	23314·1*b*
	4278·21	1		1·17	,,	23367·8*b*
	4277·65*	1		,,	,,	23370·8*b*
4272·304	4272·29*†	8	4272·0 ,,	,,	,,	23399·6*ab*
4266·425	4266·44*†	8	4266·0 ,,	,,	,,	23432·3*ab*
	4265·38	2		,,	,,	23438·1*b*
4259·491	4259·50†	9	4259·5 ,,	,,	,,	23470·5*ab*
4251·329	4251·27	5	4251·5 ,,	,,	6·6	23515·6*ab*
	4247·68	1		,,	,,	23535·7*b*
	4228·27*†	4		1·16	,,	23643·7*b*
	4212·37	1		,,	,,	23733·0*b*
	4210·14	1		,,	,,	23745·6*b*
4205·007		1		,,	,,	23774·6*a*
	4202·11*†	4		1·15	,,	23791·0*b*
4200·799	4200 75*†	10	4201·0 ,,	,,	,,	23798·5*ab*
4198·162	4198·40†	10	4198·0 ,,	,,	6·7	23812·6*ab*
4191·841	4191·02*†	10		,,	,,	23851·5*ab*
4190·841	4190·85*†	7	4191·5 ,,	,,	,,	23854·8*ab*
4182·002	4182·03*†	7	4183·0 ,,	,,	,,	23905·2*ab*
4164·309	4164·36*†	7	4164·5 ,,	,,	,,	24006·6*ab*
4162·906		1		,,	,,	24015·0*a*
4158·722	4158·63*†	10	4159·5 ,,	1·14	,,	24039·3*ab*
4154·657		1	4156·6 ,,	,,	,,	24062·6*a*
4154·663		2		,,	,,	24062·6*ab*
	4152·97	5		,,	,,	24072·5*b*
	4150·18	1		,,	,,	24088·6*b*
	4147·36	2		,,	6·8	24105·0*b*
	4141·65	1		,,	,,	24138·2*b*
	4134·48	1		,,	,,	24180·0*b*
	4131·95*	2		,,	,,	24194·8*b*
	4104·10*	3		1·13	,,	24359·1*b*
	4055·91	1		1·12	6·9	24648·5*b*
	4054·65	4		1·11	,,	24656·1*b*
	4050·18	3		,,	7·0	24683·3*b*
4046·620		2		,,	,,	24712·0*a*
4046·027	4046·04	3		,,	,,	24708·6*ab*
4044·565	4044·52†	8	4044·0 ,,	,,	,,	24717·7*ab*
	4033·11	3		,,	,,	24787·8*b*
	4013·97*†	4		1·10	,,	24906·0*b*
	3979 57*	5		,,	7·1	25121·2*b*
	3960·24	1		1·09	,,	25243·9*b*
	3954·77	1		,,	7·2	25278·7*b*
3949·107	3949·08†	8	3948·5 ,,	,,	,,	25315·1*ab*
3947·645	3947·75	5		,,	,,	25324·0*ab*
	3943·55	2		,,	,,	25350·6*b*
	3928·78*†	4		1·08	,,	25446·0*b*
	3914·93*†	1		,,	,,	25536·0*b*
3900·065	3900·04	5?		,,	7·3	25633·4*ab*
3894·795	3894·78	3		1·07	,,	25668·0*ab*
	3868·68*	3		,,	,,	25841·3*b*
3866·353	3866·23	1		,,	,,	25858·3*ab*
3850·693	3850·70*†	3		1·06	,,	25962·0*ab*
3834·768	3834·83	8	3835·5 ,,	,,	,,	26069·7*ab*
	3809·58*	2		1·05	7·4	26242·2*b*

RED SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ +	$\frac{1}{\lambda}$ −	
3801·049		1		1·05	7·4	26301·1*a*
3781·461	3781·50	3		,,	,,	26437·3*ab*
	3781·07*	2		,,	,,	26440·1*b*
3775·476	3775·62	2		1·04	,,	26478·3*ab*
3770·440	3770·80*	4	3771·5 Crookes	,,	7·5	26513·3*ab*
	3765·48*	2		,,	,,	26549·5*b*
	3760·43	1		,,	,,	26585·2*b*
3743·808	3743·95	1		,,	,,	26702·8*ab*
3738·030	3738·04*	1		,,	,,	26744·5*ab*
	3729·52*†	3		1·03	,,	26805·6*b*
3696·587	3696·70	2		,,	7·6	27044·0*ab*
3691·001	3691·09	3		1·02	,,	27085·0*ab*
	3680·30*	5		,,	7·7	27164·0*b*
	3678·43*	6		,,	,,	27177·8*b*
3675·353	3675·38	2		,,	,,	27200·5*ab*
3670·783	3670·98	2		,,	,,	27234·0*ab*
3663·392		1		,,	,,	27394·4*a*
3659·632	3659·70	3		,,	,,	27317·1*ab*
3654·962		1		1·01	,,	27352·4*a*
3650·258	3649·99	3		,,	,,	27388·6*ab*
3643·227	3643·30	3		,,	,,	27440·2*ab*
3634·586	3634·64	6		,,	,,	27505·5*ab*
3632·766	3632·82	4	3632·5 ,,	,,	,,	27519·2*ab*
3606·677	3606·69†	3	3605 0 ,,	1·00	,,	27718·5*ab*
3599·822	3599·19	1		,,	,,	27773·8*ab*
	3588·64*	2		,,	7·9	27857·8*b*
	3582·72	1		,,	,,	27903·9*b*
	3582·54*	2		,,	,,	27905·3*b*
	3581·82*	1		,,	,,	27910 9*b*
	3576·80*	3		0·99	,,	27950·1*b*
3572 416	3572·44	3		,,	,,	27984·2*ab*
3567 789	3567·88	7	3566·5 ,,	,,	,,	28020·3*ab*
3564·423	3564·54*	3		,,	,,	28046·7*ab*
3563·362	3563·50	6	3562·8 ,,	0·99	7·9	28055·0*ab*
	3561·51*†			,,	,,	28070 1*b*
3559·601	3559·69*	2		,,	,,	28085·4*ab*
3556·135	3556·16	2		,,	,,	28112·4*ab*
	3555·55	2		,,	,,	28117·1*b*
3554·435	3554·48	5	3554·5 ,,	,,	,,	28125·8*ab*
	3551·95	1		,,	,,	28145·5*b*
3545·947	3545·87	3		,,	8·0	28193·5*ab*
3514·513	3514·53*	2		0·98	,,	28445·4*ab*
3509·934				,,	,,	28487 3*a*
3506·650	3506·64	2		,,	8·1	28509·2*ab*
3493·435	3493·40	2		0·97	,,	28617·2*ab*
3476·894	3476·96*	2		,,	,,	28752·9*ab*
3461·192	3461·23	3		,,	8 2	28883·4*ab*
3455·076	3455·14	1		0·96	,,	28934·5*ab*
3442·640	3442·77	1		,,	,,	29038·7*ab*
3406·287	3406·29	1		0·95	8·3	29348·3*ab*
3398·016		1		,,	,,	29420·6*a*
3393·848	3394 03	3		,,	8·4	29456·0*ab*
3392·885	3392·94	2		,,	,,	29464·8*ab*
3389·955	3390·05	1		,,	,,	29490·1*ab*
3388·464		1		,,	,,	29501·5*a*

RED SPECTRUM OF ARGON—*continued.*

Wave-length Kayser (a)	Wave-length Eder & Valenta (b)	Intensity	Previous Observations	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
3387·698	3387·80	1		0·95	8·4	29509·7*ab*
3381·573	3381·67	1		,,	,,	29563·2*ab*
3373·586	3373·65	2		0·94	,,	29633·4*ab*
3360·146		1		,,	8·5	29752·9*a*
3341·637		1		,,	,,	29916·9*a*
3325·626	3325·63	2		0·93	,,	30061·0*ab*
	3323·91	1		,,	8·6	30077·5*b*
3319·459	3319·42	2		,,	,,	30117·0*ab*
3303·08		1		,,	,,	30266·4*a*
3302·50		3		,,	,,	30271·5*a*
3295·44		2		0·92	,,	30336·4*a*
3244·51		1		0·91	8·8	30812·5*ab*
3175·11		1		0·89	9·0	31486·1*a*
3131·90		2		0·88	9·1	31920·4*a*
3125·70		4		,,	,,	31983·8*a*
	3034·7	4		0·86	9·4	32943·8*b*
	3029·10*	2		,,	,,	33003·7*b*
	3027·07*	1		,,	,,	33025·8*b*
3021·52	3021·9	4		0·85	9·5	33085·4*ab*
	2979·35*	2		0·84	9·6	33554·7*b*
2972·60		1		,,	,,	33631·1*a*
2968·39		2		,,	9·7	33678·6*a*
2967·35	2967·3	5		,,	,,	33690·4*ab*
	2943·17*	1		,,	9·8	33967·1*b*
	2893·5	1		0·82	10·0	34550 2*b*
	2891·87*	3		,,	,,	34569·7*b*
	2873·5	3		,,	,,	34790·8*b*
	2866·0*	1		,,	10·1	34880·7*b*
	2833·6	3		0·81	10·2	35280·6*b*
	2802·2	3		0·80	10·3	35675·9*b*
	2614·6	4		0·76	11·1	38235·7*b*
	2614·2*	1		,,	,,	38241·7*b*
	2577·6	1		0·75	11·3	38784·5*b*
	2571·5*	1		,,	,,	38876·6*b*
	‖2536·7	8		0·74	11·4	39409·8*b*
	2516·3	4		0·73	11·6	39729·3*b*
	2478·65	3		,,	11·8	40332·8*b*
	2476·35	2		,,	,,	40370·2*b*

BLUE SPECTRUM OF ARGON.

Wave-length Kayser (a)	Wave-length Eder & Valenta (b)	Intensity	Previous Observations	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
6684·2		2		1·82	4·0	14956·7
6644·2		3		1·80	4·1	15046·6
6638·6		2	6628 ? Crookes	,,	,,	15059·3
6482·8		1		1·76	4·2	15421·2
6243·7		2	6232 ? ,,	1·70	4·3	16011·8
6215·6*		1		1·69	4·4	16084·3

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$−	
6172·3*		3	6173 Crookes	1·68	4·4	16197·1
6140·9		1		1·67	„	16279·9
6114·1		3	6120 „	1·66	„	16351·2
	6032·69*	2		1·64	4·5	16571·8
	5928·61*	1		1·61	4·6	16862·7
	5912·48*	1		„	„	16908·8
	5889·02*	1		1·60	„	16976·2
	5834·63*	1		1·59	4·7	17134·3
	5772·52*	1		1·57	„	17318·8
	5739·87*†	2		1·56	„	17417·3
	5691·94*	1		1·55	4·8	17563·9
	5690·19*	1		„	„	17569·0
	5682·26*	1		„	„	17593·8
	5659·47*	2		1·54	„	17664·7
	5651·03*†	5		„	„	17691·1
	5649·02*	1		„	„	17697·3
	5641·74*	1		„	„	17720·2
	5639·39*	1		„	„	17727·6
	5635·91*	1		„	„	17738·6
	5624·06*	1		1·53	„	17776·0
	5618·30*	1		„	„	17794·2
	5607·44*†	6		„	4·9	17828·6
	5597·89*†	3		„	„	17859·0
	5582·20*†	1		1·52	„	17909·2
	5577·98	2		„	„	17922·7
	5572·87*†	4		„	„	17939·2
	5559·93*†	2		„	„	17980·9
	5559·02*†	8		„	„	17983·8
	5554·37	2		„	„	1 998·9
	5534·73*	1		1·51	„	18062·8
	5529·18*	1		„	„	18051·0
	5525·27*†	2		„	„	18093·8
	5506·43*†	3		1·50	„	18155·6
	5498·55	2		„	5·0	18181·6
	5496·16*†	6		„	„	18189·0
	5490·37*	1		„	„	18208·0
	5473·76*	1		1·49	„	18264·0
	5467·41*	1		„	„	18385·2
	5457·75*	2		„	„	18317·6
	5454·71	2		„	„	18327·8
	5451·95*†	4		„	„	18337·1
	5443·54*†	2		„	„	18365·4
	5442·54*	1		„	„	18368·7
	5440·28*†	2		„	„	18376·4
	5421·68*†	4		1·48	„	18439·5
	5410·76*	2		„	„	18476·7
	5407·70	2		„	„	18487·1
	5402·95	2		„	„	18503·4
	5397·90	2		1·47	5·1	18520·6
	5394·20*	1		„	„	18533·3
	5375·76*	1		„	„	18603·8
	5306·04†	4		1·45	„	18841·3
	5287·24†	5		„	5·2	18908·3
	5265·05	1		1·44	„	18988·0
	5254·73*	1			„	19025·1

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length: Kayser (a)	Wave-length: Eder & Valenta (b)	Intensity	Previous Observations	Reduction to Vacuum: λ+	Reduction to Vacuum: $\frac{1}{\lambda}$ −	Oscillation Frequency in Vacuo
	5253·09*	2		1·44	5·2	19031·2*b*
	5221·65*†	4		1·43	5·2	19145·8*b*
	5217·17†	3		,,	,,	19162·3*b*
	5187·47*†	3		1·42	5·3	19271·9*b*
	5177·81*	1		,,	,,	19307·9*b*
	5176·56†	4		,,	,,	19312·5*b*
	5166·03†	5		1·41	,,	19351·9*b*
	5162·59*†	3		,,	,,	19364·8*b*
	5151·74*	2		,,	,,	19404·7*b*
5145·565	5145·57	4		,,	,,	19428·9*ab*
5141 909	5142·20	4	5140 Crookes	,,	,,	19442·2*ab*
	5126·14	2		1·40	,,	19502·5*b*
	5118·55*	1		,,	,,	19531·4*b*
	5090·81	2		1·39	5·4	19637·8*b*
	5076·25†	1		,,	,,	19694·0*b*
5062·199	5062·35†	5	5065 ,,	1·38	,,	19748·6*ab*
	5060·39*	2		,,	,,	19755·9*b*
	5024·47	3		1·37	5·5	19897·1*b*
5017·331	5017·46†	4	5012 ,,	,,	,,	19925·2*ab*
5009·426	5009·63†	5	5007 ,,	,,	,,	19956·5*ab*
	4972·40†	4		1·36	,,	20105·5*b*
4965·239	4665·38†	4	4965·5 ,,	,,	,,	20134·2*ab*
	4955·31	4		,,	,,	20174·9*b*
	4949·53	2		1·35	,,	20198·4*b*
	4943·17†	4		,,	,,	20224·3*b*
4933·406	4933·49†	4	4938 ,,	,,	5·6	20264·2*ab*
	4905·05†	4		1·34	,,	20381·6*b*
	4893·57	4		,,	,,	20429·4*b*
	4888 88†	4		,,	,,	20449·4*b*
	4888·21*	2		,,	,,	20451·8*b*
	4882·46	4		,,	,,	20475·9*b*
4880·004	4880·14†	8	4879 ,,	,,	,,	20485·9*ab*
	4867·72†	5		1·33	,,	20537·9*b*
	4866·14†	6		,,	,,	20544·6*b*
	4861·44	2		,,	,,	20564·3*b*
4847·963	4847·94†	6	4847·5 ,,	,,	5·7	20621·5*ab*
	4834·32	1		1·32	,,	20679·7*b*
	4819·43	2		,,	,,	20743·6*b*
4806·173	4806·17†	8	4805·0 ,,	,,	,,	20801·4*ab*
	4792·29	1		1·31	,,	20861·1*b*
	4791·49	1		,,	,,	20864·7*b*
	4771 75†	3		,,	5·8	20950·9*b*
4765·028	4765·04†	4	4763·0 ,,	,,	,,	20980·4*ab*
	4754·64	2		1·30	,,	21026·3*b*
4736·065	4736·03*†	6	4734·5 ,,	,,	,,	21108 8*ab*
4727·027	4727 90†	4	4726·6 ,,	1·29	,,	21149·2*ab*
	4708·66	3		,,	,,	21231·6*b*
	4702 40*	1		,,	5·9	21259·8*b*
4658·079	4658·04*†	4	4656·5 ,,	1·28	,,	21462·4*ab*
	4640·21	2		1·27	,,	21544·8*b*
4637·351	4637·35†	3		,,	,,	21558·1*ab*
4609·742	4609·73*†	7	4608·0 ,,	1·26	6·0	21687·2*ab*
4590·081	4590·05*†	5	4586 9 ,,	,,	,,	21775·8*ab*
4579 527	4579·53†	6	4579·5 ,,	1·25	,,	21830·0*ab*
	4565 42	2		,,	,,	21897·8*b*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length Kayser (a)	Wave-length Eder & Valenta (b)	Intensity	Previous Observations	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
	4564·55	3		1·25	6·0	21901·9*b*
	4563·87	3		,,	,,	21905·1*b*
	4561·20	1		,,	6·1	21918·0*b*
	4547·88	2		,,	,,	21982·1*b*
4545·220	4545·26†	6	4543·5 Crookes	,,	,,	21949·9*ab*
	4535·70	3		1·24	,,	22041·2*b*
	4530·73	3		,,	,,	22064·1*b*
4503·111	4503·15	5		1·23	,,	22200·7*ab*
	4493·68	4		,,	,,	22222·6*b*
	4491·22†	4		,,	6·2	22259·5*b*
4482·003	4481·99†	5	4478·3 ,,	,,	,,	22305·2*ab*
4475·015	4475·15	2		,,	,,	22339·8*ab*
4460·682	4460·70	2		1·22	,,	22411·9*ab*
4449·123	4449·13	2		,,	,,	22469·9*ab*
4443·545	4443·50	1		,,	,,	22498·4*ab*
4439·539	4439·50	1		,,	,,	22518·9*ab*
4434·037	4434·10	2		,,	,,	22546·5*ab*
4431·172	4431·16*†	3		,,	,,	22561·8*ab*
4430·355	4430·35*†	5	4426·5 ,,	1·21	6·3	22565·3*ab*
4426·165	4426·16*†	8	4422·5 ,,	,,	,,	22587·2*ab*
4421·113	4421·06†	1		,,	,,	22612·5*ab*
4408·095	4408·06	1		,,	,,	22679·3*ab*
4401·156	4401·19*†	5	4399·5 ,,	,,	,,	22715·0*ab*
4400·271	4400·25*†	3		,,	,,	22719·7*ab*
4383·900	4383·94	2		1·20	,,	22803·3*ab*
4379·827	4379·79*†	5	4376·5 ,,	,,	,,	22825·7*ab*
4376·112	4376·15†	3		,,	,,	22845·4*ab*
4375·201	4375·25	1		,,	,,	22849·7*ab*
4371·504	4371·46*†	4	4369·0 ,,	,,	,,	22869·4*ab*
4370·928	4370·92†	3		,,	,,	22872·2*ab*
4367·952	4368·04†	1		,,	,,	22887·4*ab*
4362·229	4362·20†	2		,,	6·4	22917·7*ab*
4352·368	4352·40†	4		1·19	,,	22969·5*ab*
4348·222	4348·11*†	9	4348·5 ,,	,,	,,	22992·3*ab*
4343·904	4343·90	2		,,	,,	23014·4*ab*
4337·244	4337·20*	1		,,	,,	23049·9*ab*
4333·70	4333·65*†	4		,,	,,	23068·7*ab*
4332·205	4332·15	3		,,	,,	23076·7*ab*
4331·354	4331·31*†	4	4333·5 ,,	,,	,,	23081·2*ab*
4309·311	4309·31†	2		1·18	,,	23199·2*ab*
4300·824	4300·82†	2	4299·0? ,,	,,	6·5	23244·9*ab*
4298·222	4298·20	1		,,	,,	23259·0*ab*
4283·054	4283·03†	3		,,	,,	23341·3*ab*
4277·718	4277·65*	6	4277·0 ,,	1·17	,,	23370·6*ab*
4275·327	4275·34	1		,,	,,	23383·5*ab*
4266·684	4266·44*†	6	4266·0 ,,	,,	,,	23431·6*ab*
	4255·73	1		,,	,,	23491·2*b*
4237·395	4237·34	3		1·16	6·6	23593·0*ab*
4229·813		1		,,	,,	23636·1*a*
4229·015		1		,,	,,	23639·6*a*
4228·310	4228·27*†	5	4228·5 ,,	,,	,,	23642·5*ab*
4227·146	4227·14	2		,,	,,	23650·6*ab*
4222·839	4222·76	3		,,	,,	23674·4*ab*
4218·843	4218·79	3		,,	,,	23696·7*ab*
4203·609	4203·54	1		1·15	,,	23782·7*ab*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$ −	
4202·106	4202·11*†	2		1·15	6·6	23791·0*ab*
4189·774	4200·75*†	1		„	„	23798·6*b*
	4191·02*†	1		„	6·7	23853·8*b*
	4190·85*†	1		„	„	23854·8*b*
4183·106	4182·03*†	2	4183·0 ? Crookes	„	„	23905·1*b*
4179·479	4179·45	3		„	„	23919·9*ab*
4178·504	4178·53	3		„	„	23925·1*ab*
	4164·36*†	1		1·14	„	24006·6*b*
	4158·65*†	1		„	„	24039·6*b*
4156·295	4156·36	2		„	„	24053·2*ab*
4146·761	4146·68	1		„	6·8	24108·4*ab*
4131·913	4131·95*	3	4131·5 „	„	„	24195·0*ab*
	4129·89	2		1·13	„	24206·9*b*
	4128·87†	4		„	„	24212·9*b*
4112·916	4113·04†	3		„	„	24306·5*ab*
4104·107	4104·10*	7	4105·0 „	„	„	24359·6*ab*
4099·602	4099·59	2		„	„	24385·8*ab*
	4098·33	3		„	6·9	24393·2*b*
4097·265	4097·36	1		„	„	24399·4*ab*
4089·041	4089·04	1		1·12	„	24448·7*ab*
4082·535	4082·59†	2		„	„	24487·5*ab*
4080·872	4080·85 } †	1		„	„	24497·7*ab*
4079·712	4079·80 }	2		„	„	24504·4*ab*
4077·207	4077·15	2		„	„	24519·9*ab*
4076·854	4076·85	5		„	„	24521·8*ab*
4072·579	4072·58 } †	3		„	„	24547·5*ab*
4072·159	4072·18 }	4	4072·5 „	„	„	24550·0*ab*
4068·171		1		„	„	24574·7*a*
4053·111	4053·12	4		1·11	„	24665·5*ab*
4043·039	4043·04	3	4044·0 „	„	7·0	24726·9*ab*
4038·966	4038·99†	4		„	„	24751·7*ab*
4035·624	4035·58†	4		„	„	24772·4*ab*
4034·022	4033·99†	4	4033·0 „	„	„	24782·2*ab*
4023·730	4023·68	3		„	„	24845·7*ab*
4017·986		1		„	„	24881·1*a*
4014·002	4013·97*†	7	4013·0 „	1·10	„	24905·0*ab*
4011·527	4011·38	1		„	„	24921·6*ab*
4010·052		1		„	„	24930·3*a*
3995·035	3994·81	3		„	7·1	25024·7*ab*
3992·196	3992·17†	4		„	„	25041·8*ab*
3988·378	3988·37	1		„	„	25065·8*ab*
3979·541	3979·57*	5	3978·5 „	„	„	25121·3*ab*
3974·859		1		1·09	„	25151·0*a*
3974·646	3974·70†	4		„	„	25152·2*ab*
3968·496	3968·54	3	3967·8 „	„	„	25191·3*ab*
3960·591	3960·62	3		„	„	25241·6*ab*
3958·529	3958·58	3		„	„	25254·7*ab*
3952·892	3952·82	1		„	7·2	25290·8*ab*
3946·290	3946·20	4		„	„	25333·3*ab*
3944·409	3944·50	4	3943·5 „	„	„	25344·8*ab*
3937·208		1		„	„	25391·5*a*
	3934·20	3		1·08	„	25411·0*b*
3932·717	3932·71	4	3931·8 „	„	„	25420·5*ab*
3931·382	3931·32†	2		„	„	25429·4*ab*
3928·749	3928·78*†	7	3928·5 „	„	„	25446·1*ab*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	1/λ −	
3925·903	3925·93	3	3927·5 Crookes	1·08	7·2	25464·6*ab*
3924·798		1		,,	,,	25471·8*a*
3914·931	3914·93*†	3	3915·4 ,,	,,	,,	25536·0*ab*
3911·721	3911·69	1		,,	,,	25557·1*ab*
3907·896	3907·80	1		,,	7·3	25581·9*ab*
3900·763		2		,,	,,	25628·7*a*
3892·128	3892·15†	4	3892·6 ,,	1·07	,,	25685·5*ab*
3891·550	3891·53†	2		,,	,,	25689·6*ab*
3880·432	3880·46	3		,,	,,	25762·9*ab*
3875·406	3875·40†	5	3875·5 ,,	,,	,,	25796·4*ab*
3874·288		1		,,	,,	25803·9*a*
3872·326	3872·26	4	3871·8 ,,	,,	,,	25817·2*ab*
3868·718	3868·68*	7	3868·5 ,,	,,	,,	25841·2*ab*
3858·456		2		,,	,,	25909·8*a*
3856·210		1		1·06	,,	25924·9*a*
3855·366		1		,,	,,	25930·5*a*
3854·522		1		,,	,,	25936·3*a*
3850 715	3850·70*†	8	3851·5 ,,	,,	,,	25961·9*ab*
3846·860		1		,,	,,	25987·9*a*
3845·535	3845·51†	3	3845·5 ,,	,,	,,	25997·0*ab*
3844·921	3844·90	3		,,	,,	26001·8*ab*
3841·709	3841·63	3		,,	,,	26023·1*ab*
3830·585	3830·58†	3		,,	,,	26099·4*ab*
3826·976	3826·92	3	3827·5 ,,	,,	,,	26123·2*ab*
3825·865	3825·89	1		,,	,,	26130·5*ab*
3819·300	3819·15	1		,,	,,	26176·1*ab*
3809·649	3809·58*	3	3809·5 ,,	1·05	7·4	26242·0*ab*
3808·746	3808·72†	3		,,	,,	26248·1*ab*
3803·381	3803·38	3	3803·5 ,,	,,	,,	26285·6*ab*
3800·429	3800·40†	2		,,	,,	26305·5*ab*
3799·596	3799·65	3	3799·5 ,,	,,	,,	26311·0*ab*
3796·882	3796·83	2		,,	,,	26330·1*ab*
3795·509	3795·56†	3		,,	,,	26339·3*ab*
3786·536	3786·60†	4		,,	,,	26401·8*ab*
3781·018	3781·07*	7	3780·8 ,,	,,	,,	26440·4*ab*
3776·885		1		1·04	,,	26469·5*a*
3770·719	3770·80*	2	3770·5 ,,	,,	,,	26512·3*ab*
3766·286	3766·30	3		,,	,,	26473·7*ab*
3765·463	3765·48*	5	3766·0 ,,	,,	7·5	26549·6*ab*
3763·715	3763·76	4		,,	,,	26561·8*ab*
3756·541		1		,,	,,	26612·7*a*
	3754·28	3		,,	,,	26626·8*b*
3753·722	3753·60	3		,,	,,	26633·3*ab*
3750·428	3750·79	2		,,	,,	26654·8*ab*
3747·135	3747·25	1		,,	,,	26679·1*ab*
	3739·88	2		,,	,,	26731·3*b*
3738·094	3738·04*	3	3738·5 ,,	,,	,,	26744·3*ab*
3735·542		1		1·03	,,	26765·2*a*
	3734·70	5		,,	,,	26768·2*b*
3733·122		1		,,	,,	26780·5*a*
3729·450	3729·52*†	9	3729·8 ,,	,,	,,	26805·9*ab*
3725·665		1		,,	7·6	26833·2*a*
3724·697	3724·67	3		,,	,,	26840·3*ab*
3720·617	3720·61	1		,,	,,	26869·6*ab*
3718·403	3718·39	5	3718·0 ,,	,,	,,	26886·7*ab*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$−	
3717·367	3717·36	3		1·03	7·6	26893·1*ab*
3716·704		1		"	"	26898·0*a*
3714·744		1		"	"	26912·2*a*
3712·941	3713 19	2		"	"	26925·1*ab*
3710 167	3710·11	1		"	"	26945 2*ab*
3696·160		1		1·02	"	27047·5*a*
3692·739		1		"	"	27072·6*a*
3680·124	3680·30*	1		"	7·7	27164·7*ab*
3678·478	3678·43*	2		"	"	27176·8*ab*
3670·071		1		"	"	27239 7*a*
3669·700	3669·63	2		"	"	27242·7*b*
3660·635	3660·70	1		"	"	27309·7*ab*
3656·270	3656·26	3		1·01	"	27344·1*ab*
3655·474	3655·52	5		"	"	27348 4*ab*
3651·141	3651·04	4		"	"	27381·4*ab*
3650·313		1		"	"	27387 0*a*
3640·022	3640·00	2		"	"	27464·7*ab*
3638·015		7	3631·7 Crookes	"	7·8	27479·8*a*
3637·212	3637·25	3		"	"	27485·7*ab*
3622·354	3622·31	2		"	"	27598·6*ab*
	3612·00	2		1·00	"	27677·7*b*
	3611·11	1		"	"	27684·5*b*
3606·056		2		"	"	27723·3*a*
	3605·05	3		"	"	27731·1*b*
3603·981	3603 70	1		"	"	27740·4*ab*
	3601·68	2		"	"	27757 0*b*
	3601·10	1		"	"	27761·5*b*
	3600·24	2		"	"	27768·1*b*
	3598·60	3		"	"	27780·7*b*
3592·198		1		"	7·9	27830·2*a*
3588·633	3588·64*	9	3587·0 "	"	"	27857·8*ab*
3587·122		1		"	"	27869·6*a*
3586·122		1		"	"	27877·4*a*
3585·203		1		"	"	27884·6*a*
3582·547	3582·54*	7	3580·3 "	"	"	27905·2*ab*
3581·802	3581·82*	4		"	"	27910·9*ab*
3580·439		1		"	"	27921·6*a*
3579·000		1		"	"	27932·9*a*
3576·808	3576·80*	8	3575·0 "	0·99	"	27950·1*ab*
3573·290		1		"	"	27977·5*a*
3565 221	3565·20	3	3564·0 "	"	"	28041·0*ab*
3564·586	3564·54*	2		"	"	28046·0*ab*
	3564·50	4		"	"	28046·5*b*
3563·198	3563·46	1		"	"	28055·8*ab*
3562·388		1		"	"	28063·2*a*
3561·213	3561·51*†	7	3560·0 "	"	"	28071·3*ab*
	3561·20	5		"	"	28072·5*b*
3559·695	3559·69*	8	3558·2 "	"	"	28084·3*ab*
3558·670		1		"	"	28092·5*a*
3557·029		1		"	"	28104·7*a*
3556·167		1		"	"	28112·2*a*
3555·107		1		"	"	28120·5*a*
3548 680	3548·69	3		"	8·0	28171·5*ab*
3546·005	3546·03	7	3547·5 "	"	"	28192·5*ab*
3545·792	3545·78	7	3544·5 "	"	"	28194 5*ab*

Blue Spectrum of Argon—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			$\lambda +$	$\frac{1}{\lambda} -$	
3535·514	3535·53	4	3534·3 Crookes	0·98	8·0	28276·4*ab*
3522·100	3522·14†	3		,,	,,	28384·1*ab*
3521·431	3521·46	3		,,	,,	28390·5*ab*
3520·191	3520·15	5		,,	,,	28399·7*ab*
	3519·52	3		,,	,,	28405·0*b*
3518·079		1		,,	,,	28416·6*a*
3514·576	3514·53*	4	3513·5 ,,	,,	,,	28445·1*ab*
3514·351		4		,,	,,	28446·8*a*
3511·804	3511·79	1		,,	,,	28467·4*ab*
3511·286	3511·35	6	3508·8 ,,	,,	,,	28471·3*ab*
3509·961	3509·93	5		,,	,,	28482·4*ab*
3509·475	3509·54	3		,,	8·1	28485·9*ab*
3507·795		1		,,	,,	28499·9*a*
3507·268		1		,,	,,	28504·1*a*
3506·426		1		,,	,,	28510·9*a*
	3505·08	3		,,	,,	28521·9*b*
3503·730	3503·76†	2		,,	,,	28532·8*ab*
3502·841	3502·00	2		,,	,,	28543·6*ab*
3500·724		1		,,	,,	28557·5*a*
3499·815	3499·85†	3		,,	,,	28564·7*ab*
3498·419		1		0·97	,,	28576·3*a*
3497·219		1		,,	,,	28586·1*a*
3495·193		1		,,	,,	28602·7*a*
3493·562		1		,,	,,	28616·0*a*
3491·723	3491·71†	9	3490·0 ,,	,,	,,	28631·1*ab*
3491·440		5		,,	,,	28633·4*a*
3491·030		2		,,	,,	28636·7*a*
3488·316		1		,,	,,	28659·0*a*
3484·121		1		,,	,,	28694·3*a*
3480·636	3480·69†	5		,,	,,	28722·0*ab*
3478·410	3478·42†	2		,,	,,	28740·7*ab*
3476·926	3476·96*	6	3475·7 ,,	,,	,,	28752·9*ab*
3473·368		1		,,	,,	28782·4*a*
3472·713		1		,,	,,	28787·3*a*
3471·443		1		,,	,,	28798·4*a*
3466·533	3466·40	3		,,	8·2	28839·6*ab*
	3466·07	4		,,	,,	28842·9*b*
3464·364	3464·33	2		,,	,,	28857·3*ab*
3455·572		1		0·96	,,	28930·6*a*
3454·298	3454·30	4	3453·5 ,,	,,	,,	28941·2*ab*
3450·223		1		,,	,,	28975·7*a*
	3448·46	2		,,	,,	28990·2*b*
3445·254		1		,,	,,	29017·2*a*
3438·174		2		,,	,,	29077·1*a*
	3432·75	2		,,	,,	29122·9*b*
3430·650	3430·58	1		,,	8·3	29140·7*ab*
3429·846	3429·81	3		,,	,,	29147·5*ab*
3424·385	3424·41	2		,,	,,	29193·9*ab*
3421·821	3421·80	4		,,	,,	29216·0*ab*
3417·608		1		0·95	,,	29251·9*a*
	3414·61	3		,,	,,	29277·6*b*
3413·665		1		,,	,,	29285·7*a*
	3406·43	2		,,	,,	29347·9*b*
3104·432		1		,,	,,	29365·2*a*
	3397·97	2		,,	,,	29421·0*b*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observati ns	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			$\lambda +$	$\frac{1}{\lambda} -$	
	3393·46	1		0·95	8·4	29460·1*b*
3391·959	3391·86	5		"	"	29473·5*ab*
3388·706	3388·65	5	3388·0 Crookes	"	"	29501·8*ab*
	3384·94	2		"	"	29534·2*b*
	3383·87	1		"	"	29543·6*b*
	3381·27	2		"	"	29570·3*b*
3379·674	3379·73	2		"	"	29580·0*ab*
3376·618	3376 61	5		0·94	"	29607·1*ab*
3371·077	3371·07	3		"	"	29655·8*ab*
3366·758	3366·75	3		"	"	29693·8*ab*
3365·660	3365·67	2		"	"	29703·4*ab*
3361·973	3361·33	1		"	"	29738·9*ab*
3361·418		2		"	"	29740·6*a*
3358·633	3358·67	4		"	8·5	29765·5*ab*
3355·298		1		"	"	29795·1*a*
3352·248		2		"	"	29822·2*a*
3351·112	3351·10	4		"	"	29832·4*ab*
3348·161		1		"	"	29858·6*a*
3344·857	3344·89	5		"	"	29888·0*ab*
3342·532		1		"	"	29908·5*a*
3341·518	3341·88	1		"	"	29916·4*ab*
3339·602		1		"	"	29935·2*a*
3336·269	3336·32	4		0·93	"	29964·9*ab*
3332 972		1		"	"	29995·0*a*
3327·441		1		"	"	30044·6*a*
3323·671		2		"	8·6	30078·6*a*
3314·622		1		"	"	30160·8*a*
3311·318	3311·34	5		"	"	30190·7*ab*
3308 040		1		"	"	30220·7*a*
3307·368	3307·37	5		"	"	30226·9*ab*
3306·499		1		"	"	30243·9*a*
3305·720		1		"	"	30242·0*a*
3305·249		2		"	"	30246 3*a*
3301·938	3301·97	6		"	"	30276·5*ab*
3298·652		2		0·92	"	30306·8*a*
3293·768	3293·82	4		"	"	30351·5*ab*
3289·201		2		"	"	30388 4*a*
3285·913	3285·91	7		"	8·7	30424·3*ab*
3282·661		2		"	"	30454·4*a*
3281·867	3281·83	5		"	"	30461·9*ab*
3273·476	3273·40	2		"	"	30540·2*ab*
3271·122		1		"	"	30561·8*a*
3263·953		1		"	"	30629·0*a*
326[illegible]·722	3263·71	3		"	"	30631·2*ab*
	3259 73	1		0·91	"	30668·1*b*
	3258·95	1		"	"	30776·0*b*
3251·888	3251·90	2		"	8·8	30742·5*b*
3249·972	3249·95	4		"	"	30760·8*ab*
3245·638		1		"	"	30801·8*a*
3243·845	3243 85	3		"	"	30818·8*ab*
3237·920	3237 05	2		"	"	30879·4*ab*
3236·812		1		"	"	30885·8*a*
	3230·30	1		"	"	30948 1*b*
	3226·16	2			"	30977·6*b*
3222·183	3222·62	1			"	31026·9*a*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ +	$\frac{1}{\lambda}$ −	
	3221·41	2		0·91	8·8	31033·3*b*
	3217·89	1		0·90	„	31067·4*b*
	3216·98	2		„	„	31076·2*b*
3212·737	3212·76	3		„	8·9	31117·1*ab*
3210·678		1		„	„	31137·2*a*
	3207·85	1		„	„	31164·6*b*
3204·469	3204·49	4		„	„	31197·5*ab*
3196·109		1		„	„	31279·1*a*
3194·400	3194·52	3		„	„	31295·3*ab*
3187·970		1		„	„	31359·3*a*
	3186·42	2		„	„	31374·2*b*
3183·171		1		„	„	31406·4*a*
3181·174	3181·26	5		0·89	„	31425·5*ab*
	3179·30	1		„	9·0	31445·5*b*
	3173·26	1		„	„	31504·3*b*
3171·767		1		„	„	31519·1*a*
3169·812	3169·88	4		„	„	31538·6*ab*
	3167·70	2		„	„	31559·6*b*
3165·480	3165·36	2		„	„	31582·4*ab*
3161·519	3161·64	5		„	„	31620·8*ab*
	3159·47	1		„	„	31641·9*b*
3157·577	3157·13	2		„	„	31663·1*ab*
	3154·06	2		„	„	31696·2*b*
	3152·89	1		„	„	31707·9*b*
	3150·70	1		„	„	31729·9*b*
	3148·53	1		„	„	31751·8*b*
	3146·63	1		„	„	31770·9*b*
3139·156	3139·26	5		0·88	9·1	31846·5*ab*
	3137·88	2		„	„	31859·5*b*
3127·996		1		„	„	31960·2*a*
3125·980		1		„	„	31980·9*a*
3116·162		1		„	„	32081·7*a*
3110·441		1		„	9·2	32140·6*a*
	3104·63	2		„	„	32200·7*b*
	3102·88	1		„	„	32218·9*b*
	3100·21	1		0·87	„	32246·7*b*
3093·478	3093·57	6	3092·7 Crookes	„	„	32316·3*ab*
	3085·29	1		„	„	32402·7*b*
3083·720	3083·15	2	3084·8 „	„	„	32421·9*ab*
3078·212		2		„	9·3	32477·1*a*
3066·998	3067·16	2		„	„	32595·0*ab*
3064·830		2	3064·7 „	„	„	32619·9*a*
3054·846		3		0·86	9·4	32725·3*a*
3048·552		1		„	„	32793·1*a*
3046·130	3046·28	2		„	„	32818·4*ab*
3039·477		1		„	„	32819·0*a*
3033·620	3033·76	3		„	„	32953·8*ab*
3031·759		1		„	„	32974·8*a*
3029·015	3029·10*	4		„	„	33004·2*ab*
3027·181	3027·07*	2		„	„	33025·3*ab*
3024·078		3		„	9·5	33058·4*a*
	3014·70	1		0·85	„	33161·3*b*
3002·67		4		„	„	33294·2*a*
3000·63	3000·70	3	2998·2 „	„	„	33316·6*ab*
2979·16	2979·35*	6	2978·6 „	0·84	9·6	33555·9*ab*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ +	$\frac{1}{\lambda}$ −	
	2960·45	3		0·84	9·7	33768·9*b*
2955·37	2955·67	4		,,	,,	33825·3*ab*
2942·94	2943·17*	7	2942·7 Crookes	,,	9·8	33968·5*ab*
	2932·90	2		0·82	,,	34086·1*b*
2931·52	2931·72	3	2929·6 ,,	,,	,,	34101·0*ab*
2924·68	2924·92	4		,,	,,	34180·6*ab*
	2916·3	2		,,	9·9	34280·1*b*
2896·91	2896·97	4		,,	,,	34509·2*ab*
2891·73	2891·87*	4		,,	10·0	34570·5*ab*
2884·24	2884·1	4		,,	,,	34661·2*a*
	2879·0	4		,,	,,	34724·3*b*
2878·79		2		,,	,,	34726·8*a*
	2874·6	3		,,	,,	34777·4*b*
	2866·0*	5		,,	10·1	34881·7*b*
	2860·9	1		0·81	,,	34943·9*b*
2855·29	2855·4	3		,,	,,	35012·7*a*
2853·27	2853·5	2		,,	,,	35037·5*a*
	2847·0	3		,,	10·2	35114·5*b*
	2843·7	3		,,	,,	35155·2*b*
2842·88	2842·6	3		,,	,,	35165·4*a*
2824·47	2824·2	1	2830·2 ,,	0·80	,,	35394·7*ab*
	2818·4	1		,,	10·3	35470·8*b*
	2809·7	1		,,	,,	35581*b*
	2806·3	8		,,	,,	35624*b*
	2800·7	1		,,	,,	35695*b*
2796·66	2797·0	3	2794·4 ,,	,,	10·4	35746·5*a*
	2795·65	3		,,	,,	35759·5*b*
	2789·1	1		,,	,,	35844*b*
	2785·3	1		,,	,,	35893*b*
	2784·6	2		,,	,,	35902*b*
2774·90	2775·1	1		0·79	,,	36026·8*a*
	2769·7	8		,,	10·5	36094*b*
	2764·5	4		,,	,,	36162*b*
2762·11	2762·1	3		,,	,,	36193·7*a*
	2757·2	3		,,	,,	36258*b*
	2753·9	8		,,	,,	36302*b*
	2744·88	8		,,	10·6	36420·8*b*
	2741·1	2		0·78	,,	36471*b*
	2732·67	6		,,	,,	36583·6*b*
	2724·8	1		,,	10·7	36689*b*
	2720·4	1		,,	,,	36748*b*
	2708·40	8		,,	,,	36911·4*b*
	2701·8	1		,,	10·8	37001*b*
	2692·8	4		0·77	,,	37125*b*
	2683·6	2		,,	,,	37252*b*
	2678·6	2		,,	,,	37322*b*
	2674·3	2		,,	10·9	37382*b*
	2663·7	3		,,	,,	37531*b*
	2662·9	1		,,	,,	37544*b*
	2660·8	1		,,	,,	37572*b*
	2660·3	1		,,	,,	37578*b*
	2654·8	2		0·76	,,	37657*b*
	2652·4	1		,,	11·0	37691*b*
	2650·0	2		,,	,,	37725*b*
	2647·6	8		,,	,,	37759*b*

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$−	
	2640·9	1		0·76	11·0	37855
	2637·7	1		,,	,,	37901
	2634·4	1		,,	,,	37948
	2632·3	1		,,	,,	37979
	2627·8	2		,,	11·1	38044
	2625·0	2		,,	,,	38084
	2621·4	3		,,	,,	38137
	2617·0	2		,,	,,	38201
	2614·2*	1		,,	,,	38242
	2592·3	2		0·75	11·2	38565
	2585·0	1		,,	11·3	38674
	2579·7	1		,,	,,	38753
	2571·5*	4		,,	,,	38877
	{ 2570·0	2		,,	,,	38900
	{ 2569·3	2		,,	,,	38910
	2568·1	1		,,	,,	38928
	{ 2566·4	1		,,	11·4	38954
	{ 2565·8	1		,,	,,	38963
	2564·7	4		0·74	,,	38980
	2562·3	6		,,	,,	39016
	2559·5	3		,,	,,	39059
	2556·8	3		,,	,,	39100
	2553·6	1		,,	,,	39149
	2549·8	3		,,	,,	39208
	2547·4	1		,,	11·5	39244
	2546·0	1		,,	,,	39266
	2544·8	6		,,	,,	39284
	2540·1	3		,,	,,	39357
	2536·0	3		,,	,,	39421
	2534·8	5		,,	,,	39439
	2528·6	4		,,	11·6	39536
	2525·6	4		,,	,,	39582
	2522·5	3		,,	,,	39621
	2516·8	8		0·73	,,	39721
	2515·6	8		,,	,,	39740
	2512·3	3		,,	,,	39792
	2510·6	3		,,	11·7	39819
	2507·3	2		,,	,,	39872
	2504·7	1		,,	,,	39913
	2503·9	2		,,	,,	39926
	2501·8	3		,,	,,	39959
	2500·4	5		,,	,,	39982
	2499·5	4		,,	,,	39996
	2497·2	2		,,	,,	40033
	2496·0	3		,,	,,	40052
	2494·2	2		,,	,,	40081
	2492·0	2		,,	11·8	40116
	2491·0	6		,,	,,	40123
	2488·9	2		,,	,,	40166
	2487·0	1		,,	,,	40197
	2484·1	1		,,	,,	40244
	2483·2	1		,,	,,	40259
	2482·3	4		,,	,,	40275
	2481·6	4		,,	,,	40284
	2480·9	5		,,	,,	40296

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ +	$\frac{1}{\lambda}$ −	
	2479·2	6		0·73	11·8	40324
	2477·0	1		"	"	40359
	2475·6	3		"	11·9	40382
	2474·2	4		"	"	40405
	2473·1	2		"	"	40423
	2470·4	2		"	"	40467
	2468·8	1		0·72	"	40504
	2460·2	3		"	"	40635
	2458·2	2		"	12·0	40669
	2457·6	1		"	"	40679
	2456·4	1		"	"	40698
	2455·3	3		"	"	40716
	2454·5	6		"	"	40729
	2453·0	1		"	"	40754
	2447·9	1		"	"	40839
	2444·9	2		"	"	40889
	2443·2	2		"	"	40918
	2442·7	2		"	"	40926
	2441·3	1		"	"	40950
	2440·1	3		"	"	40970
	2438·8	6		"	"	40992
	2436·9	2		"	"	41024
	2432·8	4		"	"	41093
	2430·5	1		"	"	41132
	2430·1	2		"	"	41138
	2429·4	1		"	"	41150
	2425·4	2		"	12·2	41218
	2424·5	2		"	"	41233
	2423·9	3		"	"	41244
	2423·6	2		"	"	41249
	2422·7	2		"	"	41264
	2421·6	2		0·71	"	41283
	2420·6	4		"	"	41300
	2418·9	3		"	"	41329
	2417·3	2		"	"	41356
	2415·7	6		"	"	41384
	2414·3	3		"	"	41408
	2413·2	3		"	"	41427
	2412·6	2		"	12·3	41437
	2411·2	4		"	"	41461
	2410·4	2		"	"	41475
	2409·6	1		"	"	41488
	2408·2	1		"	"	41512
	2406·7	3		"	"	41538
	2405·2	2		"	"	41564
	2404·4	4		"	"	41578
	2403·4	2		"	"	41595
	2403·3	1		"	"	41597
	2400·0	1		"	"	41654
	2399·3	3		"	"	41667
	2398·4	3		"	"	41682
	2397·5	1		"	12·4	41698
	2395·7	4		"	"	41729
	2391·0	1		"	"	41811
	2388·2	2		"	"	41860

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			$\lambda +$	$\frac{1}{\lambda} -$	
	2386·8	3		0·71	12·4	41885
	2383·6	3		„	„	41941
	2382·6	1		„	12·5	41958
	2381·2	1		„	„	41983
	2380·0	1		„	„	42004
	2372·0	1		0·70	„	42146
	2369·4	1		„	„	42192
	2367·1	1		„	12·6	42233
	2364·2	4		„	„	42285
	2362·9	1		„	„	42308
	2361·9	1		„	„	42326
	2360·2	3		„	„	42357
	2358·5	1		„	„	46387
	2357·7	3		„	„	42402
	2355·1	1		„	„	42448
	2354·3	3		„	12·7	42463
	2353·7	1		„	„	42474
	2350·6	4		„	„	42530
	2346·7	1		„	„	42600
	2345·4	1		„	„	42624
	2344·4	5		„	„	42642
	2339·9	3		„	12·8	42724
	2337·8	5		„	„	42762
	2333·2	1		„	„	42847
	2331·7	4		„	„	42874
	2328·2	1		„	„	42939
	2324·7	1		0·69	12·9	43003
	2319·5	1		„	„	43100
	2318·0	2		„	„	43128
	2317·6	2		„	„	43135
	2316·5	4		„	„	43156
	2315·0	3		„	„	43184
	2314·0	4		„	13·0	43202
	2309·4	4		„	„	43288
	2307·5	1		„	„	43324
	2305·8	1		„	„	43356
	2302·1	3		„	„	43426
	2300·9	1		„	13·1	43448
	2300·3	2		„	„	43459
	2295·4	1		„	„	43552
	2293·0	1		„	„	43598
	2292·2	3		„	„	43613
	2290·6	1		„	„	43644
	2289·9	2		„	„	43657
	2288·8	3		„	„	43678
	2287·1	1		„	13·2	43710
	2285·8	2		„	„	43735
	2284·0	2		„	„	43770
	2283·3	3		„	„	43783
	2282·6	5		„	„	43796
	2275·3	1		0·68	13·3	43937
	2275·0	2		„	„	43943
	2272·7	1		„	„	43987
	2269·8	1		„	„	44043
	2268·7	1		„	„	44065

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			λ+	$\frac{1}{\lambda}$–	
	2267·1	1		0·68	13·3	44096
	2265·2	3		,,	,,	44133
	2263·0	2		,,	13·4	44176
	2257·0	1		,,	,,	44293
	2256·6	1		,,	,,	44301
	2255·4	1		,,	,,	44325
	2254·4	2		,,	,,	44344
	2252·4	4		,,	,,	44384
	2251·5	1		,,	,,	44401
	2249·4	1		,,	13·5	44443
	2246·1	1		,,	,,	44508
	2243·7	4		,,	,,	44556
	2241·8	1		,,	,,	44594
	2241·1	3		,,	,,	44607
	2237·9	1		,,	13·6	44671
	2236·6	1		,,	,,	44697
	2235·7	3		,,	,,	44715
	2234·7	4		,,	,,	44735
	2233·6	1		,,	,,	44757
	2231·6	2		,,	,,	44797
	2230·1	1		,,	,,	44827
	2229·7	3		0·67	,,	44835
	2227·4	3		,,	,,	44882
	2225·8	3		,,	13·7	44914
	2221·7	1		,,	,,	44997
	2221·4	1		,,	,,	45003
	2219·9	4		,,	,,	45033
	2219·0	2		,,	,,	45052
	2216·3	2		,,	,,	45107
	2211·0	1		,,	13·8	45215
	2210·5	2		,,	,,	45225
	2205·8	2		,,	,,	45321
	2195·6	2		,,	13·9	45532
	2191·7	1		,,	14·0	45613
	2181 4	1		,,	,,	45619
	2190·6	1		,,	,,	45636
	2187·3	2		,,	,,	45704
	2185·5	2		,,	,,	45742
	2181·2	2		,,	14·1	45832
	2175·6	3		0·66	,,	45950
	2174·7	2		,,	,,	45969
	2171·5	3		,,	,,	46037
	2165·8	3		,,	14·2	46158
	2164·6	1		,,	,,	46184
	2162·1	1		,,	,,	46237
	2159·3	1		,,	14·3	46297
	2154·1	1		,,	,,	46409
	2153·3	1		,,	,,	46426
	2151·2	2		,,	,,	46471
	2130·6	3		0·65	14·5	46921
	2129·5	1		,,	,,	46945
	2126·7	2		,,	14·6	47007
	2120·0	1		,,	,,	47155
	2116·1	1		,,	14·7	47242
	2106·1	1		,,	14·8	47466

BLUE SPECTRUM OF ARGON—*continued.*

Wave-length		Intensity	Previous Observations	Reduction to Vacuum		Oscillation Frequency in Vacuo
Kayser (a)	Eder & Valenta (b)			$\lambda+$	$\frac{1}{\lambda}-$	
	2103·6	1		0·65	14·8	47523
	2092·1	1		,,	14·9	47784
	2078·3	1		,,	15·0	48101
	2077·2	1		,,	,,	48126
	2063·9	1		0·64	15·2	48437
	2057·6	1		,,	,,	48585
	2050·5	1		,,	15·3	48753

TITANIUM (ARC SPECTRUM)

Hasselberg: 'Kongl. Svenska Vetenskaps—Akadem. Handl,' Bd. 28, No. 1, 1895.

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda+$	$\frac{1}{\lambda}-$	
*5899·56	6	5900·2 Thalén	1·61	4·6	16945·8
5880·55	3		1·60	,,	17000·6
*5866·69	7	5866·5 ,,	,,	,,	17040·8
5823·95	3		1·59	4·7	17165·8
*5804·45	6n		1·58	,,	17223·5
*5786·21	6n		,,	,,	17277·8
*5781·04	3		,,	,,	17293·2
*5774·27	6		1·57	,,	17313·5
*5766·56	5n		,,	,,	17336·7
*5762·52	5n		,,	,,	17348·8
*5757·08	3		,,	,,	17365·2
*5740·20	3s		1·56	,,	17416·3
*5739·69	5	5739·2 ,,	,,	,,	17417·8
*5720·70	4s		,,	4·8	17475·6
5716·71	4		,,	,,	17487·8
*5715·30	5	5715·2 ,,	,,	,,	17492·1
5714·12	4		,,	,,	17495·7
*5712·07	4s		,,	,,	17502·0
5708·46	4		,,	,,	17513·1
*5702·92	5	5702·7 ,,	1·55	,,	17530·1
*5689·70	6	5689·8 ,,	,,	,,	17570·8
*5680·15	4	5680·3 ,,	,,	,,	17600·4
*5675·61	7	5675·7 ,,	,,	,,	17614·5
*5663·16	4		1·54	,,	17653·2
*5662·37	6	5662·8 ,,	,,	,,	17655·6
*5648·81	5	5648·3 ,,	,,	,,	17698·0
*5644·37	6	5644·3 ,,	,,	,,	17712·0
*5565·70	6	5566·0 ,,	1·52	4·9	17962·3
*5514·78	6	} 5514·8 ,,	1·50	,,	18128·2
*5514·58	6		,,	,,	18128·8
*5512·72	6	5513·2 ,,	,,	,,	18135·0

* Coincident with a solar line.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ +	$\frac{1}{\lambda}$ −	
5512·00	3		1·50	4·9	18137·3
*5504·10	5	5504·2 Thalén	„	5·0	18163·3
*5490·38	6	5490·2 „	„	„	18208·7
*5488·44	5	5488·1 „	„	„	18215·1
*5482·09	5	5481·5 „	„	„	18236·2
*5481·04	5		„	„	18237·7
*5477·92	5	5477·8 „	„	„	18250 1
*5474·43	4	5474·6 „	1·49	„	18261·7
*5472·90	3		„	„	18266·8
*5471·43	4	5471·8 „	„	„	18271·8
*5460 72	3		„	„	18307·6
*5453·88	3		„	„	18330·6
5449·40	3	5449·3 „	„	„	18345·6
*5446·80	4	5447·1 „	„	„	18354·4
5438·53	3		1·48	„	18382·3
5436 93	3s		„	„	18387·7
5429·37	5	5429·9 „	„	„	18413·3
*5426·48	3	5426·3 „	„	„	18423·2
*5419·00	3	5419·2 „	„	„	18448·6
*5409 81	5	5409·9 „	„	„	18479·9
5404·25	3	5404·4 „	„	„	18499·0
*5397·28	4	5397·3 „	1·47	5·1	18522·7
*5396·78	3		„	„	18524·5
*5390·23	4		„	„	18547 0
5389·36	3		„	„	18550·0
*5381·20	3	5381·4 „	„	„	18578·1
*5369·81	5	5370·0 „	„	„	18617·5
5366·85	3		„	„	18627·8
*5351·28	4	5351·7 „	1·46	„	18682·0
5341 68	2		„	„	18715·6
*5338·54	2	5338·1 „	„	„	18726·6
*5336·96	3		„	„	18732 2
*5300·18	2	5299·6 „	1·45	5·2	18862·1
5298·61	4		„	„	18867·7
*5297·42	5	5297·8 „	„	„	18871·9
*5295 95	4	5296·6 „	„	„	18877·2
5289·02	3	5288·9 „	„	„	18901·9
*5284·61	3		1·44	„	18917·7
*5283·63	5	5283·9 „	„	„	18921·2
*5282·61	3		„	„	18924·8
*5266 20	5	5266·1 „	„	„	18983·8
5263 71	3	5264·0 „	„	„	18992·8
5260 18	3	5260 7 „	„	„	19005·6
5256 01	4	5256·1 „	„	„	19020·6
*5252·26	4	5252·1 „	„	„	19034·2
*5251·14	2		„	„	19038·3
*5247·48	3	5247·4 „	1·43	„	19051·6
5246·75	2		„	„	19054·2
5246·30	2		„	„	19055·9
*5238 77	4	5239·6 „	„	„	19083·2
*5226·70	3	5227·1 „	„	„	19127·3
*5225·15	5		„	„	19133·0
*5224 71	4	5224·1 „	„	„	19134·6
*5224·46	5		„	„	19135·5
*5223·80	3		„	„	19138·0

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*5222·87	4		1·43	5·2	19141·4
*5219·88	4		,,	,,	19152·3
*5212·50	3		1·42	,,	19179·5
*5210·55	6	5210·6 Thalén	,,	,,	19186·6
*5208·08	3		,,	5·3	19195·6
*5206·30	3	5206·6 ,,	,,	,,	19202·2
*5201·32	3	5201·6 ,,	,,	,,	19220·6
*5194·25	3		,,	,,	19246·8
*5193·15	6	5193·4 ,,	,,	,,	19250·8
*5188·87	4‖	5189·4 ,,	,,	,,	19266·7
5186·57	3	5186·2 ,,	,,	,,	19275·3
*5173·94	6	5174·1 ,,	1·41	,,	19322·3
*5152·36	5	5152·3 ,,	,,	,,	19403·3
*5147·63	5	5148·1 ,,	,,	,,	19421·1
*5145·62	5	5145·6 ,,	,,	,,	19428·7
5133·12	2		1·40	,,	19476·0
*5129·32	3	5129·7 ,,	,,	,,	19490·5
*5120·60	5	5121·0 ,,	,,	,,	19523·7
*5113·64	5	5114·1 ,,	,,	5·4	19550·1
5109·65	3	5109·7 ,,	,,	,,	19565·4
5103·39	2	5803·5 ,,	,,	,,	19589·4
*5087·24	6	5087·5 ,,	1·39	,,	19651·6
5085·55	3		,,	,,	19658·2
*5071·66	4	5071·2 ,,	,,	,,	19712·0
*5069·56	3		,,	,,	19720·2
*5068·47	3		,,	,,	19724·4
*5066·12	4	5066·5 ,,	,,	,,	19733·6
*5064·82	7	5065·4 ,,	,,	,,	19738·6
5064·26	3		,,	,,	19740·8
*5062·30	4	5062·3 ,,	1·38	,,	19748·5
5054·30	2		,,	,,	19779·7
*5053·06	4	5053·3 ,,	,,	,,	19784·6
*5045·58	3		,,	,,	19813·9
*5043·77	4	5044·4 ,,	,,	,,	19821·0
*5040·78	4		,,	,,	19832·8
*5040·12	7	5040·2 ,,	,,	,,	19835·4
*5038·55	7	5039·2 ,,	,,	,,	19841·6
*5036·65	7	} 5036·6 ,,	,,	,,	19849·1
*5036·10	7		,,	,,	19851·2
*5025·72	6	5025·8 ,,	1·37	5·5	19892 1
*5025·00	6	5024·8 ,,	,,	,,	19895·0
*5023·02	7	5022·2 ,,	,,	,,	19902·8
*5020·17	7	5020·4 ,,	,,	,,	19914·1
*5016·32	7	5016·3 ,,	,,	,,	19929·4
*5014·40	8	5014·3 ,,	,,	,,	19937·1
*5013·45	6	5013·2 ,,	,,	,,	19940·8
*5009·81	4		,,	,,	19955·3
*5007·42	8	5007·6 ,,	,,	,,	19964·9
*5001·16	5	5002·0 ,,	,,	,,	19989·9
*4999·67	8	4999·6 ,,	,,	,,	19995·8
*4997·26	5		,,	,,	20005·5
*4991·24	8	4991·1 ,,	,,	,,	20029·6

‖ Solar line double { Ca 5189·05. Ti 5188·87.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ +	$\frac{1}{\lambda}$ −	
*4989·33	5	4989·1 Thalén	1·36	5·5	20037·3
*4981·92	8	4981·8 ,,	,,	,,	20067·1
*4978·39	4	4978·6 ,,	,,	,,	20081·3
*4977·92	3		,,	,,	20083·2
*4975·52	5	4976·0 ,,	,,	,,	20092·9
*4973·25	4	4973·0 ,,	,,	,,	20102·1
*4968·75	4	4968·5 ,,	,,	,,	20120·3
4964·90	3	4965·3 ,,	,,	,,	20135·9
*4948·40	3	4947·8 ,,	1·35	,,	20203 1
4941·77	3		,,	5·6	20230·1
4938·51	4	4938·0 ,,	,,	,,	20243·4
4937·94	3		,,	,,	20245·8
*4928·50	5	4928·3 ,,	,,	,,	20284·6
4926·31	3	} 4925·8 ,,	,,	,,	20293·6
*4925·53	3		,,	,,	20296·8
*4921·90	5	4921·6 ,,	,,	,,	20311·8
*4919·99	5	4919·8 ,,	,,	,,	20319·6
4915·40	3		1·34	,,	20338·6
*4913·76	6	4914·0 ,,	,,	,,	20345·4
*4911·38	3		,,	,,	20355·3
*4900·08	6	4900·1 ,,	,,	,,	20402·2
4893·62	2		,,	,,	20429·2
4893·25	3		,,	,,	20430 7
4892·03	3		,,	,,	20435·8
*4885·25	7	4885·4 ,,	,,	,,	20464·2
4882·53	2		,,	,,	20475·6
*4881·08	3		,,	,,	20481·7
*4870·28	6	4869·9 ,,	1·33	,,	20527·1
*4868·44	6	4868·4 ,,	,,	,,	20534·9
4864·37	3		,,	,,	20552·0
*4856·18	6	4855·9 ,,	,,	5·7	20586·6
*4848·62	4	4848·9 ,,	,,	,,	20618·7
4844·13	3		,,	,,	20637·8
*4841·00	7	4840·9 ,,	1·32	,,	20651·2
*4836·25	4	4135·9 ,,	,,	,,	20671·5
*4827·74	3		,,	,,	20707·9
*4825·63	3		,,	,,	20717·0
*4820·56	6	4820·4 ,,	,,	,,	20738·2
4819·20	3		,,	,,	20744·6
4812·40	3		,,	,,	20774·0
*4811·24	4		,,	,,	20779·0
*4808·70	4		,,	,,	20789·9
*4805·56	5		,,	,,	20803·5
*4805·25	3	4805·2 ,,	,,	,,	20804·9
*4799·95	5‖		1·31	,,	20827·8
*4798·13	4	4798·3 ,,	,,	,,	20835·8
*4796 36	4		,,	,,	20843·4
*4792·65	5	4792·4 ,,	,,	,,	20859·6
*4781·91	4		,,	5·8	20906·3
*4778·44	5		,,	,,	20921·5
*4769·94	4		,,	,,	20958·8
4766·48	4		1·30	,,	20974·0

‖ Solar line double { Fe 4800·05. Ti 4799·95.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
*4759·44	6	4759·3 Thalén	1·30	5·8	21005·1
*4759·08	3		„	„	21006·7
*4758·30	6	4757·8 „	„	„	21010·1
*4747·84	4		„	„	21056·4
*4742·94	6	4742·6 „	„	„	21078·2
4742·28	4		„	„	21081·1
*4734·83	3		„	„	21114·3
*4733·58	4		„	„	21119·9
*4731·33	5		„	„	21129·9
*4723·32	5	4723·6 „	1·29	„	21165·7
*4722·77	5		„	„	21168·2
*4715·46	4		„	„	21201·0
*4710·34	6‖	4709·8 „	„	„	21224·1
*4698·94	6	4698·9 „	„	5·9	21275·5
4697·10	4		„	„	21283·8
*4693·83	5		„	„	21298·7
*4691·50	6	4691·5 „	1·28	„	21309·2
4690·97	4		„	„	21311·7
*4688·56	3		„	„	21322·6
4687·97	3		„	„	21325·3
4687·08	3		„	„	21329·3
*4684·68	3		„	„	21340·3
*4682·08	7	4682·4 „	„	„	21352·1
*4675·27	5		„	„	21383·2
4668·54	3		„	„	21414·1
*4667·76	8§	4667·4 „	„	„	21417·7
*4657·35	3		„	„	21465·5
*4656·60	7	4656·9 „	„	„	21469·0
*4656·20	4		„	„	21470·8
*4655·82	4		„	„	21472·6
*4650·16	5		1·27	„	21498·7
*4645·36	5	4644·9 „	„	„	21521·0
*4640·60	2		„	„	21543·0
*4640·11	5		„	„	21545·3
*4639·83	5	{ 4639·7 „	„	„	21546·6
*4639·50	5		„	„	21548·1
*4638·04	3		„	„	21554·9
*4637·34	2		„	„	21558·2
*4635·71	3		„	„	21565·8
*4635·04	3		„	6·0	21568·8
*4634·87	3		„	„	21569·6
*4629·47	5	4629·9 „	„	„	21594·7
*4623·24	6	4623·9 „	„	„	21623·9
*4619·67	3		„	„	21640·6
*4617·41	7	4617·6 „	1·26	„	21651·2
4614·47	2		„	„	21665·0
4609·55	3		„	„	21688·1
4599·40	4		„	„	21736·0
4594·28	2		„	„	21760·2
4590·11	4		„	„	21780·0
4575·71	2		1·25	„	21848·5
4572·15	6	4572·4 „	„	„	21865·5

‖ Solar line double { Fe 4710·44. Ti 4710·34.   § Solar line double { Ti 4667·75. Fe 4667·60.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4571·07	3		1·25	6·0	21870·7
*4563·94	5	4564·1 Thalén	,,	6·1	21904·8
*4563·60	3		,,	,,	21906·4
*4562·80	4		,,	,,	21910·7
*4560·08	4		,,	,,	21923·3
*4558·28	3		,,	,,	21932·0
4558·02	3		,,	,,	21933·3
*4555·64	6	4556·2 ,,	,,	,,	21944·7
*4552·62	7‖	4552·7 ,,	,,	,,	21959·3
*4549·79	6§	4549·8 ,,	,,	,,	21972·9
*4548·93	7		,,	,,	21977·1
*4544·83	7	4544·4 ,,	,,	,,	21996·9
*4536·25	6		1·24	,,	22038·5
*4536·12	6	4536·5 ,,	,,	,,	22039·2
*4535·75	6	to	,,	,,	22041·0
*4534·97	7	4533·0 ,,	,,	,,	22044·8
*4534·15	5		,,	,,	22048·8
*4533·42	7		,,	,,	22052·3
*4527·48	6	4527·1 ,,	,,	,,	22081·2
*4522·97	6	4522·9 ,,	,,	,,	22103·3
*4518·84	4		,,	,,	22123·5
*4518·18	7	4518·4 ,,	,,	,,	22126·7
4515·76	3		,,	,,	22138·6
*4512·88	6	4512·4 ,,	,,	,,	22152·7
4511·32	3		,,	,,	22160·4
4508·21	2		,,	,,	22175·7
*4506·51	3		,,	,,	22184·0
*4503·92	4		1·23	,,	22196·8
*4501·43	6	4501·6 ,,	,,	,,	22209·1
*4497·90	3		,,	,,	22226·5
*4496·33	6	4496·9 ,,	,,	6·2	22234·2
*4495·19	6		,,	,,	22239·8
*4492·70	3		,,	,,	22252·1
*4489·24	5		,,	,,	22269·3
*4488·47	3		,,	,,	22273·1
*4482·84	4		,,	,,	22301·1
*4481·41	5	4481·8 ,,	,,	,,	22308·2
*4480·72	4		,,	,,	22311·6
*4479·86	4		,,	,,	22315·9
*4475·00	5		,,	,,	22340·2
*4471·40	5		,,	,,	22358·2
*4471·00	3		,,	,,	22360·2
*4469·32	2		,,	,,	22868·6
*4468·65	6	4469·3 ,,	1·22	,,	22371·9
*4465·96	5		,,	,,	22385·4
*4464·60	3		,,	,,	22392·2
*4463·70	4		,,	,,	22396·7
*4463·52	4		,,	,,	22397·6
4462·26	3		,,	,,	22404·0
4459·62	2		,,	,,	22417·2
*4457·59	7	4458·3 ,,	,,	,,	22427·4

Solar line double { Fe 4552·72. Ti 4552·62.

§ Solar line triple { 4549·94. Ti 4549·79. Fe 4549·60.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*4455·48	6	4455·8 Thalén	1·22	6·2	22438·1
*4453·87	5		„	„	22446·2
*4453·48	6	4453·3 „	„	„	22448·2
*4451·40	3		„	„	22458·6
*4451·07	6		„	„	22460·3
*4450·66	4	} 4450·3 „	„	„	22462·4
*4449·32	6		„	„	22469·1
*4444·72	2		„	„	22492·4
*4444·41	3		„	„	22494 0
*4443·97	6	4443·8 „	„	„	22496·2
*4443·16	3		„	„	22500·3
*4441·86	3		„	„	22506·9
*4441·45	4		„	„	22509·0
*4440·49	5		„	„	22513·8
*4438·38	3		„	„	22524·5
*4436·75	4		„	„	21532·8
*4434·54	2		„	„	22544·1
*4434·15	6		„	„	22546·0
*4433·75	3		„	„	22548·1
*4432·76	3		„	„	22553·1
4431·46	4		„	6·3	22559·6
*4430·55	5		1·21	„	22564·3
*4430·19	3		„	„	28566·1
*4427·28	8	4427·6 „	„	„	22580·9
*4426·24	5		„	„	22586·2
*4426·01	3		„	„	22587·4
4424·58	3		„	„	22594·7
*4423·00	5		„	„	22602·8
*4421·92	4		„	„	22608·3
*4418·52	3		„	„	22625·7
*4417·88	5	} 4418·6 „	„	„	22629 0
*4417·46	6		„	„	22631·1
*4416·70	4		„	„	22635·0
*4414·29	2		„	„	22647·4
*4412·61	3		„	„	22656·0
*4409·71	2		„	„	22670·9
*4409 41	2		„	„	22672·5
¶*4408·70	3		„	„	22676·1
¶*4408·39	3		„	„	22677·7
¶*4407·85	3		„	„	22680·5
*4405·86	4		„	„	22690 7
4405·07	4		„	„	22694·8
*4404·57	4		„	„	22697·4
*4404·42	6	4403·8 „	„	„	22698·2
¶*4400·74	3		„	„	22717·2
*4399·92	5	4399·3 „	„	„	22721·4
*4395·99	3		„	„	22741·7
*4395·17	7		„	„	22745·9
4394·19	3		„	„	22751·0
*4394·04	6	4393·8 „	„	„	22751·8
¶*4390·11	4		1·20	„	22772·2
4388·69	2		„	„	22779·5
4388·22	3		„	„	22782·0
*4387·00	2		„	„	22788·3
¶*4384·85	4		„	„	22799·5

¶ Due to vanadium.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
¶*4379·40	4		1·20	6·3	22827·9
4375·61	2		,,	,,	22847·7
*4374·97	2		,,	,,	22851·0
*4372·54	4		,,	,,	22863·7
4369·82	5		,,	,,	22877·9
4369·11	3		,,	,,	22881·7
*4367·81	3		,,	6·4	22888·4
4361·31	2		,,	,,	22922·5
*4360·60	4		,,	,,	22926·2
*4355·44	2		1·19	,,	22953·4
4354·20	3		,,	,,	22959·9
¶4353·01	2		,,	,,	22966·2
*4350·99	2		,,	,,	22976·9
*4346·76	2		,,	,,	22999·2
*4346·76	4		,,	,,	23001·9
*4344·47	3		,,	,,	23011·4
4343·93	2		,,	,,	23014·2
*4341·51	3		,,	,,	23027·1
*4338·62	2		,,	,,	23042·4
*4388·05	6	4338·3 Thalén	,,	,,	23045·4
*4334·98	3		,,	,,	23061·8
*4330·85	3		,,	,,	23083·8
*4327·12	3		,,	,,	23103·7
*4326·50	6		,,	,,	23107·0
*4325·30	6	4324·3 ,,	,,	,,	23113·4
*4321·82	6		,,	,,	23132·0
*4321·12	3	4320·8 ,,	,,	,,	23135·7
*4318·83	7	4318·8 ,, †	1·18	,,	23148·0
*4316·96	4		,,	,,	23158·0
*4315·15	4‖		,,	,,	23167·8
*4314·95	7		,,	,,	23168·8
*4314·50	5	4314·3 ,,	,,	,,	23171·3
*4313·01	6	4313·3 ,,	,,	,,	23179·3
4311·80	3		,,	,,	23185·8
4308·64	3	4308·3 ,,	,,	6·5	23202·7
*4306·07	8	4306·0 ,,	,,	,,	23216·5
*4302·08	5		,,	,,	23238·1
*4301·23	7		,,	,,	23242·7
*4300·73	7		,,	,,	23245·4
*4300·19	6	4299·8 ,,	,,	,,	23248·3
*4299·79	6		,,	,,	23250·4
*4299·38	6		,,	,,	23252·7
*4298·82	7		,,	,,	23255·7
*4295·91	7	4295·6 ,,	,,	,,	23271·5
*4294·28	6	4294·4 ,,	,,	,,	23280·3
*4291·32	4		,,	,,	23296·4
*4291·07	6	4291·3 ,,	,,	,,	23297·7
*4290·37	5		,,	,,	23301·5
*4290·07	3		,,	,,	23303·1
*4289·23	7		,,	,,	23307·7
*4288·29	3		,,	,,	23312·8
*4287·55	7	4287·6 ,,	,,	,,	23316·8

† See Calcium. ‖ Solar line double { Fe 4315·28. Ti 4315·15.

¶ Due to vanadium.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*4286·15	7		1·18	6·5	23324·5
*4285·15	5		„	„	23329·9
*4282·85	6	4282·6 Thalén	„	„	23342·4
*4281·49	5		„	„	23349·9
*4280·17	3		1·17	„	23357·1
4278·95	2		„	„	23363·7
*4278·34	4		„	„	23367·1
*4276·55	4		„	„	23376·8
*4274·73	6	4273·6 „	„	„	23386·8
*4273·45	3		„	„	23393·8
4272·57	4		„	„	23398·6
*4270·30	4		„	„	23411·1
*4266·37	3		„	„	23432·6
*4265·85	3		„	„	23435·5
*4265·42	3		„	„	23437·9
*4263·28	6	4263·6 „	„	„	23449·6
4261·75	5		„	„	23458·0
*4260·91	2		„	„	23462·7
*4258·68	4		„	„	23475·0
*4256·18	5		„	„	23488·7
*4251·93	4		„	6·6	23512·1
*4251·77	4		„	„	23513·0
4249·29	4		„	„	23526·7
4245·66	3		„	„	23546·9
*4238·00	5	4237·1 „	1·16	„	23589·4
4227·80	4		„	„	23646·4
4224·96	4		„	„	23662·3
*4211·85	3		„	„	23735·9
*4203·58	4		1·15	„	23782·6
*4200·88	3		„	„	23797·9
4188·84	4		„	6·7	23866·3
*4186·27	7	4185·6 „	„	„	23880·9
*4183·45	3		„	„	23897·0
*4174·61	3		„	„	23947·6
*4174·20	2		„	„	23950·0
*4173·66	3		„	„	23953·1
*4172·04	4	} 4171·6 „	„	„	23962·4
*4171·15	5‖		„	„	23967·5
*4169·46	4		„	„	23977·2
*4166·45	4		1·14	„	23994·5
*4164·80	2		„	„	24004·1
*4164·27	3		„	„	24007·1
*4163·80	5	4163·6 „	„	„	24009·8
*4161·67	2		„	„	24022·1
*4158·79	5		„	„	24033·0
*4151·11	5		„	„	24083·2
4143·16	3n		„	6·8	24129·4
*4137·39	5n		„	„	24163·0
¶*4134·60	3		„	„	24179·3
4131·38	3		„	„	24198·2
*4129·30	3		1·13	„	24210·4
¶4128·20	4		„	„	24216·8

‖ Solar line double { Ti 4171·15. Fe 4171·00.

¶ Due to vanadium.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4127·67	5		1·13	6·8	24219·9
*4123·68	5n		,,	,,	24243·4
*4123·42	4n		,,	,,	24244·9
*4122·31	4		,,	,,	24251·4
4121·79	3s		,,	,,	24254·5
¶*4116·64	3		,,	,,	24284·9
¶*4115·32	4s		,,	,,	24292·6
*4112·86	5s		,,	,,	24307·2
¶*4111·91	5s		,,	,,	24312·8
¶*4109·92	3		,,	,,	24324·6
¶*4105·31	3		,,	,,	24351·9
*4101·08	2		,,	,,	24377·0
¶*4099·94	3s		,,	,,	24383·8
*4099·32	4		,,	6·9	24387·4
¶*4095·65	2		,,	,,	24409·2
¶*4092·83	3		1·12	,,	24426·1
¶*4090·73	2		,,	,,	24438·6
*4082·57	5s		,,	,,	24487·5
4079·85	4		,,	,,	24503·8
*4078·61	6‖		,,	,,	24511·3
*4077·30	2		,,	,,	24519·1
4076·50	2		,,	,,	24523·9
4074·50	2		,,	,,	24536·0
*4065·23	4s		,,	,,	24592·0
*4064·36	4s		,,	,,	24597·2
*4060·42	5		,,	,,	24621·1
4058·28	4n		,,	,,	24634·1
4057·76	3n		,,	,,	24637 2
*4055·18	5		,,	,,	24652·9
*4053·96	3		1·11	,,	24660·3
4035·98	4		,,	7·0	24770·1
*4035·05	3		,,	,,	24775·8
*4034·05	3		,,	,,	24782·0
4030·60	5n		,,	,,	24803·2
*4028·48	3		,,	,,	24816·3
4027·66	3		,,	,,	24821·3
4026·64	5n		,,	,,	24827·6
*4025·26	2		,,	,,	24836·1
*4024·71	6		,,	,,	24839·5
4021·98	5n		,,	,,	24856·4
4017·93	4		,,	,,	24881·4
4017·13	2		,,	,,	24886·4
4016·44	3n		,,	,,	24890·7
4015·56	4n		1·10	,,	24896·1
4013·72	5n		,,	,,	24907·5
*4012·55	3s		,,	,,	24914·8
4009·80	4		,,	,,	24931·9
*4009·06	6		,,	,,	24936·5
4008·20	4n		,,	,,	24941·9
4007·38	3n		,,	,,	24947·0
4006·14	3n		,,	,,	24954 7
4003·99	4n		,,	,,	24968·1

‖ Solar line double $\left\{\begin{array}{l}\text{Ti } 4078{\cdot}61.\\ \text{Fe } 4078{\cdot}50.\end{array}\right.$

¶ Due to vanadium.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
4002·63	4n		1·10	7·1	24976·5
3999·53	3n	3999·6 Lockyer	„	„	24995·8
*3998·77	8	3998·9 „	„	„	25000 6
3994·84	3n		„	„	25025·2
*3989·92	8‖	3990·1 „	„	„	25056·1
3985·76	3n		„	„	25082·2
3985·57	3n		„	„	25083·4
3984·48	3		„	„	25090·3
*3982·62	5	3982·4 „	„	„	25102·0
*3981·91	7	3981·7 „	„	„	25106·5
*3964·40	5s	3964·2 „	1·09	„	25217·4
*3962·98	5s	3962·6 „	„	„	25226·4
*3958·33	7	3958·1 „	„	„	25256·1
*3956·45	7§	3956·4 „	„	„	25268·1
*3948·80	7†	3948·6 „	„	7·2	25317·0
*3947·90	6	3947·7 „	„	„	25322·7
*3938·18	2	3938·1 „	„	„	25385·2
3934·37	3	3934·1 „	1·08	„	25409·8
*3930·02	5	3929·9 „	„	„	25438·0
*3926·48	5	3926·4 „	„	„	25460·9
*3924·67	5	3924 7 „	„	„	25472·7
*3221·56	4	3921·3 „	„	„	25492·9
*3919·95	3	3919·8 „	„	„	25503·3
3916·27	3		„	„	25527·3
3916·00	3		„	„	25529·1
*3914·86	3s		„	„	25536·5
*3914·45	5	3914·3 „	„	„	25539·2
*3913·58	5	3913·5 „	„	„	25544·9
*3911·34	4n	3911·2 „	„	„	25559·5
*3904·95	7	3904·9 „	„	7·3	25601·2
*3901·13	5	3901·2 „	„	„	25626·3
*3900·68	5	3900·7 „	„	„	25629·3
*3898·68	4s		„	„	25642·4
*3895 42	7		1·07	„	25663·9
*3890·12	4s		„	„	25698·8
*3888·20	4n		„	„	25711·5
*3883·02	7n		„	„	25745·8
*3882·49	5n		„	„	25749·4
*3882·28	6n		„	„	25750·8
*3881·58	3		„	„	25755·4
3877·75	3n		„	„	25780·9
*3875·44	6n		„	„	25796·2
3874·32	4		„	„	25803·7
3873·40	5n		„	„	25809·8
*3870·28	3		„	„	25830·6
*3869·75	3		„	„	25834·2
3869·47	5n		„	„	25836 0
3869·13	2		„	„	25838·3

‖ Solar line double {Fe 3990·00. Ti 3989·92.}

† Solar line triple {3949·00. Fe 3948·90. Ti 3948·80.}

§ Solar group {Fe {3957·10. 3956·75. 3956·55.} Ti 3956·45.}

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3868·56	5n		1·07	7·3	25842·1
*3867·92	4n		,,	,,	25846·4
*3866·60	6n		,,	,,	25855·2
*3866·17	2		,,	,,	25858·1
*3864·66	2		,,	,,	25868·2
*3862·98	5n		,,	,,	25879·5
*3861·89	3n		,,	,,	25886·8
3861·25	4		,,	,,	25891·1
*3860·61	3		,,	,,	25895·3
*3858·26	5n		,,	,,	25911·1
*3858·04	3		,,	,,	25912·6
*3855·99	3		1·06	,,	25926·4
*3853·87	5n		,,	,,	25940·6
*3853·18	5n		,,	,,	25945·3
*3848·48	3s		,,	,,	25977·0
*3846·57	4		,,	,,	25989·9
*3845·28	3		,,	,,	25998·6
3842·77	2		,,	,,	26015·6
3841·79	2		,,	,,	26022·2
*3840·90	2		,,	,,	26028·3
3840·48	2		,,	,,	26031·1
*3836·90	4		,,	,,	26055·4
*3836·22	3s		,,	,,	26060·0
3834·06	3		,,	,,	26074·7
*3833·80	4s		,,	,,	26076·5
*3833·33	4s		,,	,,	26079·7
3829·87	3		,,	,,	26103·2
*3828·31	4		,,	,,	26113·9
*3828·16	3		,,	,,	26114·9
3827·80	2		,,	,,	26117·4
3827·61	2		,,	,,	26118·7
*3827·12	3		,,	,,	26122·0
*3823·03	2		,,	,,	26150·0
*3822·16	5s§		,,	,,	26155·9
*3821·86	2		,,	,,	26158·0
*3818·38	4		,,	,,	26181·8
*3817·78	4		,,	7·4	26185·8
*3815·01	3		1·05	,,	26204·9
*3814·72	4		,,	,,	26206·8
*3813·54	3		,,	,,	26215·0
*3813·42	3		,,	,,	26215·8
*3811·56	2		,,	,,	26228·6
3807·93	2		,,	,,	26253·6
3807·37	2		,,	,,	26257·4
*3806·60	2		,,	,,	26262·8
3806·19	2		,,	,,	26265·6
*3805·64	2		,,	,,	26269·4
3805·25	2		,,	,,	26272·1
*3801·73	2s		,,	,,	26296·4
*3801·25	3s		,,	,,	26299·7
*3798·47	3		,,	,,	26319·0

§ Solar line triple $\left\{\begin{array}{l}\text{Ti 3822·16.}\\ \text{Fe 3822·06.}\\ \text{Ti 3821·16.}\end{array}\right.$

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3796·06	4		1·05	7·4	26335·7
3789·46	4		"	"	26381·6
*3786·44	3		"	"	26402·6
*3786·20	5§		"	"	26404·3
*3782·26	3		"	"	26431·8
*3776·20	2		1·04	"	26474·2
*3771·80	5		"	7·5	26505·0
*3766·60	2		"	"	26541·6
*3762·01	2		"	"	26574·0
*3761·46	7		"	"	26577·9
*3759·42	7		"	"	26592·3
*3757·82	4s		"	"	26603·7
*3753·75	5		"	"	26632·5
*3753·00	7		"	"	26637·8
3748·26	4		"	"	26671·5
*3741·78	4s		"	"	26717·8
*3741·19	6		"	"	26722·0
3739·17	3		"	"	26736·4
*3735·84	3		1·03	"	26760·2
*3733·96	3		"	"	26773·7
*3729·92	7		"	"	26802·7
*3725·28	5		"	7·6	26836·0
*3724·70	5		"	"	26840·2
*3722·70	5		"	"	26854·6
*3721·75	4		"	"	26861·5
*3717·53	3		"	"	26892·0
*3710·10	4		"	"	26945·9
3708·83	3		"	"	26955·1
*3707·68	3		"	"	26963·4
*3706·37	3		"	"	26973·0
*3704·84	2		"	"	26984·1
*3704·42	4		"	"	26987·2
3703·13	2		"	"	26996·6
*3702·42	4		"	"	27001·8
3700·22	3		"	"	27017·8
3698·33	3		"	"	27031·6
*3697·05	2		1·02	"	27041·0
*3694·58	5		"	"	27059·1
3692·35	4n		"	"	27075·4
*3690·04	6		"	"	27092·4
*3688·19	2		"	"	27106·0
3687·48	4		"	"	27111·2
3686·10	4		"	"	27121·3
*3685·30	8n		"	"	27127·2
*3681·38	3		"	7·7	27156·0
*3679·88	4n		"	"	27167·1
3677·90	2		"	"	27181·7
*3671·82	6		"	"	27226·8
*3669·08	5		"	"	27247·1
*3666·71	2		"	"	27264·7
*3663·82	2		"	"	27286·2

§ { Fe 3786·34. Ti 3786·20. Fe 3786·12.

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3662·37	5		1·02	7·7	27297·0
*3660·75	6		"	"	27309·1
*3659·91	5s		"	"	27315·4
*3658·22	7		"	"	27328·0
*3654·72	6		1·01	"	27354·2
*3653·61	10n		"	"	27362·5
*3646·32	5s		"	"	27417·2
*3644·87	4		"	"	27428·1
*3642·82	10n		"	"	27443·6
*3641·48	5s		"	"	27453·7
3638·10	4		"	7·8	27479·1
*3636·05	2		"	"	27494·6
*3635·61	9n		"	"	27497·9
*3635·33	4		"	"	27500·0
*3633·60	4		"	"	27513·1
*3626·22	3s		"	"	27569·1
*3624·97	4s‖		"	"	27578·6
3623·25	4n		"	"	27591·7
*3621·37	4n		"	"	27606·1
*3620·15	2		"	"	27615·4
3614·35	4n		1·00	"	27659·7
3613·89	4		"	"	27663·2
3612·40	3n		"	"	27674·6
*3610·29	6		"	"	27690·8
3609·72	3		"	"	27695·2
*3607·26	4n		"	"	27714·1
3606·18	1		"	"	27722·4
*3605·46	4s		"	"	27727·9
*3604·39	3s		"	"	27736 1
*3603·98	3		"	"	27739·3
*3601·52	2		"	"	27758·3
*3601·31	2		"	"	27759·9
*3599·25	5		"	"	27775·8
*3598·87	5		"	"	27778·7
*3596·17	5		"	"	27799·6
*3594·13	2		"	7·9	27815·2
*3580·40	3		"	"	27921·9
3578·40	3		"	"	27937·6
*3576·00	2		0·99	"	27956·3
*3574·38	4		"	"	27969·0
*3573·85	4§		"	"	27973·1
*3566·16	3		"	"	28033·5
*3561·72	3		"	"	28068·4
*3558·66	4		"	"	28092·6
3556·32	3n		"	"	28111·1
*3547·15	5		"	8·0	28183·6
*3545·11	2		"	"	28199·9
*3542·69	3		"	"	28219·1
*3535·56	5		0·98	"	28276·1
*3530·53	6s		"	"	28316·4
3527·62	3		"	"	28339·7
*3526·18	3		"	"	28351·3

‖ Solar line double { Ti Fe 3625·00. / Ni 3624·87. }

§ Solar line double { Fe 3574·05. / Ti 3573·85. }

TITANIUM (ARC SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
*3525·28	3		0·98	8·0	28358·5
*3524·37	4		,,	,,	28365·9
*3520·39	4s		,,	,,	28397·9
*3520·15	3n		,,	,,	28399·9
*3516·97	3		,,	,,	28425·6
*3512·23	4b		,,	,,	28463·9
*3511·74	2		,,	,,	28467·9
*3510·98	6s		,,	,,	28474·1
*3507·55	3		,,	8·1	28501·8
*3506·76	4‖		,,	,,	28508·3
*3505·02	6		,,	,,	28522·4
*3500·48	3		,,	,,	28559·4
*3499·24	4		,,	,,	28569·5
*3495·88	4		0·97	,,	28597·0
*3393·44	2		,,	,,	28617·0
*3491·20	6s		,,	,,	28635·3
*3489·90	3		,,	,,	28646·0
*3485·84	3		,,	,,	28679·4
3481·83	2		,,	,,	28712·4
*3480·67	5		,,	,,	28722·0
3479·07	3		,,	,,	28735·2
*3477·33	5		,,	,,	28749·6

‖ Solar line double $\begin{cases}\text{Ti } 3506·77. \\ \text{Fe } 3506·66.\end{cases}$

562 Titanium lines coincide with solar lines, and 156 are doubtful or do not coincide.

Rowland's Normal Solar Lines (on which these measurements of the Titanium Lines rest): **5893·10, 5884·05, 5831·84, 5805·45, 5791·21, 5772·36, 5754·89, 5731·98, 5688·43, 5658·09, 5569·84, 5513·19, 5487·96, 5466·60, 5447·12, 5424·27, 5397·34, 5367·67, 5300·82, 5266·73, 5230·01, 5202·49, 5155·94, 5121·80, 5090·96, 5060·25, 5036·10, 5007·42, 4978·78, 4934·24, 4903·48, 4890·94, 4859·93, 4824·31, 4805·25, 4783·60, 4754·22, 4727·62, 4703·98, 4679·02, 4668·30, 4637·67, 4611·44, 4578·72, 4563·94, 4536·25, 4508·45, 4494·72, 4468·65, 4447·90, 4425·60, 4407·85, 4376·10, 4343·98, 4318·83, 4293·24, 4267·94, 4254·49, 4215·65, 4185·05, 4157·94, 4121·96, 4088·71, 4062·60, 4048·88, 4029·79, 4003·91, 3971·48, 3942·55, 3924·67, 3897·60, 3875·23, 3843·40, 3821·32, 3794·02, 3770·12, 3747·09, 3716·57, 3695·19, 3684·25, 3658·68, 3640·53, 3612·21, 3583·48, 3564·68, 3540·27, 3518·48, 3491·47, 3478·00.**

¶ Hasselberg has since found that the lines **4408·70, 4408·39, 4407·85, 4400·74, 4390·11, 4384·85, 4379·40, 4353·01, 4134·60, 4128·20, 4116·64, 4115·32, 4111·91, 4109·92, 4105·31, 4099·94, 4095·65, 4092·83, 4090·73,** are due to vanadium ('Bihang till K. Svenska Vet. Akad. Handlingar,' Bd. xxii. (1), No. 7, 1897).

Copper (Spark Spectrum).

Eder and Valenta: 'Denkschr. kaiserl. Akad. Wissensch. zu Wien,' 1896.
Exner and Haschek: 'Sitzber. kaiserl. Akad. Wissench. Wien,' civ. (1895), cv., cvi. (1896).

Wave-length (Rowland)	Intensity and Character	* Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda+$	$\frac{1}{\lambda}-$	
6381·1	6s	6381·2 Thalén	1·73	4·2	15667·1
6219·5	4s	6219·7 „	1·69	4·4	16074·1
*5782·30	8s	5782·4 „ 5782·5 Neovius	1·58	4·7	17289·5
5768·65	1nb		1·57	„	17330·4
5760·49	1nb		„	„	17354·9
*5732·50	1nb		1·56	„	17439·7
*5700·39	6s	5701·8 „ 5700·8 „	1·55	4·8	17537·9
5696·68	3b		„	„	17549·3
5685·03	1b		„	„	17585·3
5679·42	3s		„	„	17602·6
5675·85	2b		„	„	17613·7
5672·92	2b		„	„	17622·8
5668·77	2b		„	„	17635·7
5666·62	3s		„	„	17642·4
5663·52	1n		1·54	„	17652·1
5652·16	4b		„	„	17687·5
*5646·13	3b		„	„	17706·4
5644·39	1n		„	„	17711·9
5639·50	1n		„	„	17727·3
5636·84	1b		„	„	17735·6
5624·71	1b		1·53	„	17773·9
5621·17	3b		„	„	17785·1
5618·70	3b		„	„	17792·9
5608·83	3s		„	4·9	17824·1
5574·10	3b		1·52	„	17935·2
5571·47	1n		„	„	17943·7
5566·35	3s		„	„	17960·2
5563·83	2s		„	„	17968·3
*5555·15	2b		„	„	17996·4
5543·11	2b		1·51	„	18035·5
*5535·90	3b		„	„	18059·0
5500·09	2s		1·50	5·0	18176·5
5498·14	2s		„	„	18183·0
5495·12	4s		„	„	18193·0
5487·30	3s		„	„	18218·9
5475·49	2n		1·49	„	18258·2
5472·00	3b		„	„	18269·8
5463·55	4b		„	„	18298·1
5460·25	2b		„	„	18309·2
5456·02	2s		„	„	18323·4
5453·93	1n		„	„	18330·4
5450·62	2s		„	„	18341·5
5440·90	1n		„	„	18374·3
5438·79	4s		1·48	„	18381·4
*5432·26	2b		„	„	18403·5
5429·01	1b		„	„	18414·6

* Observed in the Arc spectrum by Kayser and Runge.

† Observed only in air; the spark was usually taken between copper poles in hydrogen.

‡ Observed in the arc spectrum between copper poles by Crew and Tatnall: 'Astr. and Astrophysics,' November 1894.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5422·93	1b		1·48	5·0	18435·2
5418·61	4s		,,	,,	18449·9
5410·97	2b		,,	,,	18476·0
*5408·55	3n		,,	,,	18484·2
*5391·92	2n		1·47	5·1	18541·2
5389·70	3s		,,	,,	18548·8
5380·75	3s		,,	,,	18579·7
5369·63	3s		,,	,,	18618·2
*5360·20	2s†		1·46	,,	18650·9
5357·27	2n		,,	,,	18661·1
*5355·10	1n†		,,	,,	18668·7
*5352·85	1n		,,	,,	18676·5
5340·71	1b		,,	,,	18719·0
5338·19	1b		,,	,,	18727·8
5325·38	3s		1·45	,,	18772·9
5317·60	4b		,,	,,	18800·4
5309·41	2s		,,	,,	18829·4
5295·71	2s		,,	5·2	18878·0
*5292·75	6s	5293·1 Thalén 5293·0 Neovius	,,	,,	18888·6
5287·66	2s		1·44	,,	18906·8
5285·77	2s		,,	,,	18913·5
5282·34	2b		,,	,,	18925·8
5270·13	1s†		,,	,,	18969·7
5268·38	3s		,,	,,	18976·0
5255·62	1s		,,	,,	19022·1
*5250·82	2n		1·43	,,	19039·4
5232·80	2s		,,	,,	19105·0
*5220·25 }	6s	} 5218·1 ,, 5218·1 ,,	,,	,,	19151·0
*5218·45 }	10sr		,,	,,	19157·6
5208·37	2s		1·42	5·3	19194·6
5203·74	3s		,,	,,	19211·6
*5201·14	2n		,,	,,	19221·3
*5153·40	10sr	5153·3 ,, 5153·6 ,,	1·41	,,	19399·4
*5144·40	1s		,,	,,	19433·3
5139·03	2n		,,	,,	19453·6
5133·86	1n		1·40	,,	19473·2
5130·97	1s		,,	,,	19484·2
5124·70	1n double		,,	,,	19508·0
5120·00	2s		,,	,,	19526·0
5112·18	2s		,,	5·4	19555·7
*5105·75	8s	5105·5 ,, 5105·9	,,	,,	19580·4
5095·08	2n		1·39	,,	19621·4
5094·29	2n		,,	,,	19624·4
5089·54	2n		,,	,,	19642·7
*5076·49	1n		,,	,,	19693·2
5067·33	2b		,,	,,	19728·9
5060·86	1s		1·38	,,	19754·1
5059·58	1b		,,	,,	19759·1
5053·02	2n		,,	,,	19784·7
*5034·49	1n		,,	,,	19857·6
5016·99	2n		1·37	5·5	19926·8
5013·40	2n		,,	,,	19941·0
5007·49	1s		,,	,,	19964·6
5005·38	2s		,,	,,	19973·0
5001·50	1s		,,	,,	19988·5

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4985·94	2n		1·36	5·5	20050·9
4954·83	4n	4956·5 Thalén 4955·8 Neovius	„	„	20176·8
4945·17	1n		1·35	„	20216·3
4938·56	1b		„	5·6	20243·2
4932·86	4b	4933·4 „ 4932·5 „	„	„	20266·6
4927·66	1s		„	„	20288·0
4921·82	1n		„	„	20312·1
4919·65	1n		„	„	20321·0
4913·98	1n		1·34	„	20344·5
4910·77	3n	4912·3 „ 4911·0 „	„	„	20357·8
4889·89	2s		„	„	20444·8
*4867·33	2n		1·33	„	20539·5
4856·48	1n		„	5·7	20585·3
*4767·74	1n		1·31	5·8	20968·5
4758·61	2n	4758·5 Neovius	1·30	„	21008·7
4748·85	2s		„	„	21051·9
§*4704·76	5s	4704·0 Thalén 4703·2 Neovius	1·29	5·9	21249·2
§*4697·83	3n		„	„	21280·5
4683·35	2n		1·28	„	21346·3
*4674·98	6s		„	„	21384·6
§*4651·29	8s	4651·5 „ 4651·3 „	1·27	„	21493·5
4649·31	2s		„	„	21502·7
*4643·05	2b		„	„	21531·7
4634·47	1n		„	6·0	21571·4
4630·77	4s		„	„	21588·7
4623·26	1n		„	„	21623·8
4621·52	2s		„	„	21631·9
4614·30	2n		1·26	„	21665·8
4607·45	2s		„	„	21698·0
4601·80	2s		„	„	21724·6
§*4587·17	8s	4587·4 Neovius	„	„	21793·9
§*4555·94	1n	4556·2 „	1·25	6·1	21943·3
§*4539·60	3b	4540·1 „	1·24	„	22022·3
§*4530·98	2s	4531·1 „	„	„	22064·2
§*4509·50	4b	4509·9 „	„	„	22169·3
*4507·77	1n		„	„	22177·8
4505·65	1n		1·23	„	22188·3
4492·57	2b		„	6·2	22252·8
§*4480·52	3b	4480·6 „	„	„	22312·6
§*4416·06	1b		1·21	6·3	22638·3
§*4378·30	1n	4378·2 „	1·20	„	22833·6
§*4275·36	10s	4275·5 Thalén 4275·3 Neovius	1·17	6·5	23383·3
§*4260·17	1n		„	„	23466·7
§*4249·17	3b	4249·4 Neovius	„	6·6	23527·4
§*4228·37	1n		1·16	„	23643·2
§*4177·92	2b		1·15	6·7	23928·7
§*4062·89	7b^{r}	4063·0 „	1·12	6·9	24606·1
§4043·70	3s		1·11	7·0	24722·8
§*4022·91	4s	4022·9 „	„	„	24850·6
3983·31	1n		1·10	7·1	25097·6
3981·84	1n		„	„	25106·9
3979·74	1n		„	„	25120·2
§3962·77	1n		1·09	„	25227·8
3959·60	1n		„	„	25248·0
3954·98	1n		„	7·2	25277·4

§ Exner and Haschek's numbers are:—4651·35, 4587·20, 4531·10, 4509·62, 4275·35, 4062·90

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3952·02	1n		1·09	7·2	25296·3
3948·18	1n		„	„	25320·9
§3934·15	2s		1·08	„	25411·3
3923·10	2s		„	„	25482·8
3919·72	2n		„	„	25504·8
3917·67	1n		„	„	25518·2
3914·00	2n		„	„	25542·1
3912·35	1n		„	„	25552·9
*3899·90	2s		„	7·3	25634·4
3894·64	1n		1·07	„	25669 0
‡3888·77	1n		„	„	25707·8
Several	indistinct	lines here			
3887·12	1n		„	„	25718·7
§*3861·88	1s		„	„	25886·8
§*3860·95	2n		„	„	25893·1
3839·03	2n	3860·7 Neovius	1·06	„	26040·9
3834·86	1n		„	„	26069·3
3831·97	1n		„	„	26088·9
3826·40	2n		„	„	26126·9
‡§3813·77	2n		1·05	7·4	26213·4
§*3812·05	1n		„	„	26225·2
§3809·29	3n		„	„	26244·2
§3807·84	2n		„	„	26254·2
§3804·50	1n		„	„	26277·3
§3801·29	1n		„	„	26299·5
3799·47	1n		„	„	26312·1
§3791·12	4n		„	„	26370·0
3784·24	2n		„	„	26418·0
3781·97	1n		„	„	26433·8
‡3780·31	1n		„	„	26445·5
§3777·17	3n		„	„	26467·4
§3775·15	2n		1·04	„	26481·6
§3772·17	1n		„	7·5	26502·4
§3764·21	1n		„	„	26558·5
* { 3762·23§	1n		„	„	26572·5
{ 3754·78§	1n		„	„	26625·2
§3752·29	2n		„	„	26642·9
3748·50	1n		„	„	26669·8
§3744·94	2n		„	„	26695·2
§*3741·44	2s		„	„	26720·2
3737·62	1n		1·03	„	26747·5
§*3734·68	2s		„	„	26768 6
3726·43	1n		„	7·6	26827·7
§3720·32	1n		„	„	26871·8
§3715·27	1n		„	„	26908 3
§3703·10	2n		„	„	26996·8
§*3700·56	1n		„	„	27015·3
3697·99	1n		1·02	„	27034·1
*3687·75	2b		„	„	27109·2
‡§*3686·70	3s	3686·6 „	„	„	27116·9
§*3659·54	1n		„	7·7	27318·1
§*3656·22	1s		1·01	„	27343·0
§*3654·59	1n		„	„	27355·2
§*3645·00	1n		„	„	27427·1
§*3642·00	1n		„	„	27449·7

§3686·72. ‡ Crew and Tatnall's numbers are:—3888·73, 3813·60, 3780·20, 3686·87.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3639·47	1n		1·01	7·7	27468·8
§*3636·10	2n		,,	7·8	27494·2
§3633·14	1n		,,	,,	27516·6
§*3627·64	1n		,,	,,	27558·3
3625·61	1n		,,	,,	27573·8
§3624·44	1n		,,	,,	58272·7
§*3621·31	2n		,,	,,	27606·5
§*3620·46	1n		,,	,,	27613·0
§*3613·89	2n		1·00	,,	27663·2
§3611·08	1n		,,	,,	27684·7
§*3602·10	4n		,,	,,	27753·8
§*3599·24	1n	3599·7 Neovius 3599·6 Hartley & Adeney	,,	,,	27775·8
3549·09	2n		0·99	8·0	28168·2
§*3533·79	2n		0·98	,,	28290·2
§*3530·44	3s		,,	,,	28317·1
§*3527·56	2s		,,	,,	28340·2
§*3524·36	3s	3524·4 H. & A.	,,	,,	28365·9
§*3520·20	2s		,,	,,	28399·5
3516·86	1s		,,	,,	28426·5
§*3512·16	3s	3511·2 ,,	,,	,,	28464·5
§*3483·82	4s	3483·8 ,,	0·97	8·1	28696·0
§*3476·03	3s	3478·8 ,,	,,	,,	28760·4
§3472·26	1n	3472·4 ,,	,,	,,	28791·6
§*3454·64	1n	3455·8 ,,	0·96	8·2	28938·4
§*3450·43	3s	3450·6 ,,	,,	,,	28973·7
§*3415·74	1b		0·95	8·3	29267·9
§*3413·27	1b		,,	,,	29289·1
§*3404·62	1b		,,	,,	29363·6
§*3402·31	1b		,,	,,	29383·5
*3393·51	3s		,,	8·4	29459·6
§*3381·43	2n	3382·0 ,,	,,	,,	29564·9
§*3365·45	3s		0·94	,,	29705·3
§*3349·43	2s		,,	8·5	29847·3
§*3338·00	4s		0·93	,,	29949·6
§3335·59	1b		,,	,,	29971·2
*3329·64	1b		,,	,,	30024·8
§*3319·74	2s		,,	8·6	30114·2
§*3317·35	2s		,,	,,	30135·9
§*3308·10	7s	3307·8 ,,	,,	,,	30220 2
§*3292·77	1n		0·92	,,	30361·0
§*3290·60	3b	3290·7 ,,	,,	,,	30381·0
§*3282·79	2s	3282·4 ,,	,,	8·7	30453·2
§*3279·89	3s	3280·4 ,,	,,	,,	30480·1
§*3274·09	8s	3275·0 ,,	,,	,,	30534·1
§*3266·03	1s	3267·0 ,,	,,	,,	30609 5
§*3247·65	10s	3248·4 ,,	0·91	8·8	30782·7
§*3243·13	3b	3245·4 ,,	,,	,,	30825·6
§*3235·68	3s	3235·2 ,,	,,	,,	30896·6
§*3231·25	2s		,,	,,	30939·0
§*3226·60	1n		,,	,,	30983·6
§*3224·67	2n		,,	,,	31002·1
§*3223·47	2n		,,	,,	31013·7
§*3208·41	1n		0·90	8·9	31159·2
§3204·64	2b		,,	,,	31195·9

§ 3602·10, 3599·15, 3533·82, 3530·48, 3524·25, 3512·18, 3483·85, 3476·10, 3450·42, 3365·42, 3307·98, 3290·58, 3282·70, 3274·04, 3247·64.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
3200·20	2s		0·90	8·9	31239·1
§*3194·15	6s		,,	,,	31298·3
§*3169·68	3n		0·89	9·0	31539·9
*3159·85	6n		,,	,,	31638·1
§*3146 84	1n		,,	9·1	31768·8
§*3142·38	1n		,,	,,	31813·9
§*3140·33	1n	3139·7 H. & A.	0·88	,,	31834 7
§*3126·16	6s		,,	,,	31979·0
§*3116·34	1n	3116·5 ,,	,,	,,	32079·8
§*3108·55	5s	3108·2 ,,	,,	9·2	32160·1
§*3099·93	5s	3098·7 ,,	0·87	,,	32249·6
*3094·01	3s		,,	,,	32311·3
§3088·10	1n		,,	,,	32373·2
§*3073·82	1s		,,	9·3	32523·5
*3070·86	1s		,,	,,	32554·9
§*3063·50	3s		,,	,,	32633·1
§*3036·15	3s	3036·9 ,,	0·86	9·4	32927·1
§*3010·93	3s		0·85	9·5	33202·8
§3007·42	1n		,,	,,	33241·6
§*2997·47	1s		,,	9·6	33351·9
*2982·21	1n		0·84	,,	33522·6
§*2979·31	1n		,,	,,	33555·2
§2976·00	1n		,,	,,	33592·5
2971·80	1n		,,	,,	33640·0
§*2961·20	5s	2959·6 ,,	,,	9·7	33760·4
§2884·50	1n		0·82	10·0	34658·1
§*2883·05	1s	2882·9 ,,	,,	,,	34675·5
§2878·02	3s	2878·0 ,,	,,	,,	34736·1
2860·45	3s		0·81	10·1	34949·4
2858·28	1n		,,	,,	34976·0
§2837·66	2n	2837·1 ,,	,,	10·2	35230·1
§2824·47	6s		0·80	,,	35394·7
§2813·25	2s		,,	10·3	35535·8
2799·55	1b		,,	10·4	35709·6
2795·60	2s		,,	,,	35760·1
2780·25	1s		0·79	,,	35957·6
§2777·15	1s		,,	,,	35997·7
§*2769·88	4s	2769·4 ,,	,,	10·5	36092·1
§*2766·45	2s	2766·5 ,,	,,	,,	36136·9
2763·80	1s		,,	,,	36171·6
§*2751·30	2b		,,	10·6	36335·9
§2745·54	6s	2746·3 ,,	,,	,,	36412·1
§2739·98	3s		0·78	,,	36486·0
§2737·63	3s		,,	,,	36517·3
§2734·07	2n		,,	,,	36564·9
§2731·8	2n		,,	,,	36595·3
2730·4	1n		,,	,,	36614·1
§*2724·1	2n		,,	10·7	36698·7
§2721·98	4s	2721·8 ,,	,,	,,	36727·3
§2719·14	5n	2718·9 ,,	,,	,,	36765·6
§2713·82	8s	2713·7 ,,	,,	,,	36837·7
§2703·48	9s	2703·0 ,,	,,	,,	36978·7
§2701·34	10s	2701·3 ,,	,,	10·8	37007.9
2698·8	1s		0·77	,,	37042·7
§*2696·70	2s		,,	,,	37071·6

§ 3108·75, 2961·21, 2878·00, 2837·78, 2824·55, 2770·31, 2719·03, 2713·73, 2703·42, 2701·20.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
§2689·66	10s	2689·4 H. & A.	0·77	10·8	37168·6
§*2680·0	1n		„	„	37302·6
§2666·61	6s	2666·7 „	„	10·9	37489·9
§2658·7	1n		„	„	37601·5
§*2649·9	1n		0·76	11·0	37726·3
§2644·10	5s	2643·8 „	„	„	37809·1
§2641·75	2s		„	„	37842·7
*2635·1	1n		„	„	37938·2
*2630·1	1n		„	11·1	38010·3
2624·4	1n		„	„	38092·9
§*2618·46	8s	2618·3 „	„	„	38179·3
§2609·43	7s	2609·4 „	0·75	11·2	38311·3
§2600·51	10s	2600·3 „	„	„	38442·8
§2599·15	8s	2598·9 „	„	„	38462·9
§2592·9	1n		„	„	38555·7
§2590·78	5s	2590·8 „	„	„	38587·2
§2587·6	1n		„	11·3	38634·6
§2586·5	1n		„	„	38651·0
2584·0	1n		„	„	38688·4
§2581·3	1s		„	„	38728·9
§*2580·3	1s		„	„	38743·9
*2578·1	1n		„	„	38777·0
2576·8	1n		„	„	38796·5
2575·2	2s		„	„	38820·6
§2573·4	3s	2573·4 „	„	„	38847·8
§2572 0	4s	2572·4 „	„	„	38868·9
§2571·2	7n	2571·3 „	,	„	38881·0
§*2569·7	1n		„	„	38903·8
§*2566·5	5s	2565·7 „	„	11·4	38952·2
2564·4	1s		0·74	„	38984·1
*2563·1	1s		„	„	39003·9
2561·5	1n		„	„	39028·2
2557·4	1n		„	„	39090·8
§2554·4	2s		„	„	39136·7
§*2553·2	2b	2554·3 „	„	„	39155·1
2552·9	1n	2552·6 „	„	„	39159·7
2552·1	1n		„	„	39172·0
§2550·4	2b		„	„	39198·1
§2545·08	10s	2544·9 „	„	11·5	39280·0
§2538·8	4s	2538·6 „	„	„	39377·2
§2535·5	4s		„	„	39428·5
§2533·8	1n	2534·4 „	„	„	39454·9
2533·0	2n		„	„	39467·4
2532·1	2n	2531·9 „	„	„	39481·4
§2529·60	8s	2529·3 „	„	11·6	39520·3
§2526·90	5s	2526·6 „	„	„	39562·6
§2525·2	3s		„	„	39589·2
§2523·3	4s	2523·1 „	„	„	39619·0
§2522·4	4s	2522·3 „	„	„	39633·2
2521·2	2s		„	„	39652·1
§2519·1	2s		„	„	39685·1
§2518·5	3s	2518·8 „	„	„	39694·6
§2517·0	2s	2517·9 „	0·73	„	39718·2
2516·6	2s		„	„	39724·6
2515·0	1s		„	„	39749·8

§ 2689·54, 2666·40, 2600·50, 2599·00, 2590·80, 2545·06, 2529·60.

Copper (Spark Spectrum)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2513·2	5s	2513·4 H. & A.	0·73	11·6	39778·3
§2511·5	5s	2511·7 "	"	11·7	39805·1
§2508·7	5b	2509·0 "	"	"	39849·6
§2506·50	10s	2506·6 "	"	"	39884·6
2504·8	1b		"	"	39911·6
2503·6	1n		"	"	39930·8
2503·1	1n		"	"	39938·8
2501·0	2n		"	"	39972·3
2497·7	3s	2497·8 "	"	"	40025·1
§2496·2	4b	2496·3 "	"	"	40049·2
2493·6	1n		"	11·8	40090·9
§*2492·2	6s	2491·9 "	"	"	40113·4
§2489·75	8s	2489·5 "	"	"	40152·9
§2486·5	4b	2486·1 "	"	"	40205·4
§2485·9	4b		"	"	40215·1
§2482·5	5s	2482·2 "	"	"	40270·2
2481·2	1s		"	"	40291·3
2479·8	1s		"	"	40314·0
§2478·4	3n	2478·5 "	"	"	40336·8
2475·4	1n	2475·5 "	"	11·9	40385·6
§2473·6	8s	2473·6 "	"	"	40415·0
§2468·7	8s	2469·0 "	0·72	"	40495·3
§2466·0	4n	2465·7 "	"	"	40539·6
2464·1	2n		"	"	40570·9
2463·2	2n		"	"	40585·7
*2462·1	3n	2461·9 "	"	"	40603·8
2460·5	1n		"	"	40630·2
§2459·4	2s		"	12·0	40648·3
*2458·9	4s	2458·5 "	"	"	40656·6
2457·9	1n		"	"	40673·1
§2453·1	5s	2452·6 "	"	"	40752·7
2451·9	1s		"	"	40772·7
2449·5	1s		"	"	40812·7
§2447·6	2n		"	"	40844·3
2446·8	2n	2447·0 "	"	"	40857·7
2445·5	2n		"	"	40879·4
§2444·54	5s	2444·4 "	"	"	40895·5
2443·5	2n		"	12·1	40912·8
2442·6	2n		"	"	40927·9
§*2441·72	6s	2441·9 "	"	"	40942·6
§2440·2	3b	2440·2 "	"	"	40968·2
§2436·0	5s	2436·0 "	"	"	41038·8
2433·5	3s		"	"	41081·0
§2430·5	4s	2430·8 "	"	"	41131·7
2429·0	2n		"	"	41157·1
2428·3	2n	2428·7 "	"	"	41169·0
§2424·70	5s	2425·8 "	"	12·2	41230·0
2421·8	3s	2422·7 "	0·71	"	41279·4
2420·0	1n		"	"	41310·1
2418·5	1n		"	"	41335·7
2414·9	1n		"	"	41397·4
2414·3	2s		"	"	41407·7
2413·2	1s		"	"	41426·6
§2412·45	5s	2412·5 "	"	12·3	41439·3
2408·6	1n		"	"	41505·6

§ 2506·55, 2489·80, 2486·10.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)		Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda+$	$\frac{1}{\lambda}-$	
*2406·8	1s			0·71	12·3	41536·6
§2405·64	4s	2405·3 H. & A.		,,	,,	41556·7
§2403·63	6b	2403·5 ,,		,,	,,	41591·4
§*2400·23	6s	2400·5 ,,		,,	,,	41650·4
§*2392·8	4 } s	2393·3 ,,		,,	12·4	41779·6
§2391·8	3 } s	2392·5 ,,		,,	,,	41797·1
2385·1	2s	2385·5 ,,		,,	,,	41914·6
§2376·6	5s	2377·1 ,,		,,	12·5	42064·4
§2370·9	2n	2372·0 ,,		0·70	,,	42165·6
§*2369·97	10s	2369·9 T. & S.	2370·6 H. & A.	,,	,,	42182·1
2368·8	2s	2368·8 ,,	2369·1 ,,	,,	,,	42203·0
§2368·4	2s			,,	12·6	42210·0
§2364·2	1n		2366·3 ,,	,,	,,	42285·0
*2363·3	1n			,,	,,	42301·1
2362·8	1n			,,	,,	42310·1
2361·6	1n			,,	,,	42331·6
§*2356·68	6s	2356·7 ,,	2357·7 ,,	,,	,,	42420·0
§2355·2	4n	2355·2 ,,	2355·3 ,,	,,	,,	42446·6
§2348·8	3n		2349·1 ,,	,,	12·7	42562·2
§2346·2	2s	2346·2 ,,	2346·5 ,,	,,	,,	42609·4
2339·1	1n			,,	12·8	42738·7
§2336·3	4s	2336·3 ,,	2337·0 ,,	,,	,,	42789·9
2324·1	1n			0·69	12·9	43014·5
2323·1	1n			,,	,,	43033·0
2320·4	2s			,,	,,	43083·1
2319·7	1s			,,	,,	43096·1
2315·9	1n			,,	,,	43166·9
2315·3	1s			,,	,,	43178·0
2312·3	1s			,,	13·0	43234·0
§2309·7	2s			,,	,,	43282·7
§2303·18	4s			,,	,,	43405·2
§2299·6	2s	2299·6 ,,	2300·8 ,,	,,	13·1	43472·7
			2297·8 ,,			
§2294·40	6s	2294·4 ,,	2295·3 ,,	,,	,,	43571·3
2293·93	3s	2293·9 ,,	2294·9 ,,	,,	,,	43580·4
§2291·1	4s	2291·1 ,,	2291·7 ,,	,,	,,	43634·1
§2286·7	4s	2286·7 ,,	2287·0 ,,	,,	13·2	43717·9
2280·9	1s			,,	,,	43829·1
§2278·4	2s	2278·4 ,,	2279·9 ,,	,,	,,	43877·3
§2276·30	6s	2276·3 ,,	2277·3 ,,	0·68	,,	43917·7
2274·9	1s			,,	13·3	43944·7
§2265·5	2s	2265·5 ,,	2266·1 ,,	,,	,,	44127·1
§2263·7	3b	2263·9 ,,	2264·2 ,,	,,	,,	44162·2
2263·2	2b	2263·2 ,,	2263·5 ,,	,,	13·4	44171·8
2260·6	2b		2260·0 ,,	,,	,,	44222·6
§2255·1	2b	2255·1 ,,		,,	,,	44330·5
2252·0	1b		2250·3 ,,	,,	,,	44391·6
§2248·9	3b	2249·0 ,,	2248·5 ,,	,,	13·5	44452·7
§2247·14	7s	2247·0 ,,	2248·0 ,,	,,		44487·5
§2244·4	1s		2244·3 ,,	,,		44541·8
§2242·6	7s	2242·7 ,,	2243·8 ,,	,,		44576·8
§2231·8	1s		2233·3 ,,	,,	13·6	44793·3
2231·1	2s	2231·0 ,,	2231·5 ,,	,,	,,	44807·3
§2230·2	3b	2230·1 ,,	2230·5 ,,	,,	,,	44825·4
§2229·0	4b	2228·9 ,,	2229·4 ,,	0·67	,,	44849·6

T. & S. = Trowbridge and Sabine. Index, p. 210.

§ 2403·55, 2400·16, 2369·95, 2294·45, 2276·30, 2247·15, 2242·70.

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)		Reduction to Vacuum		Oscillation Frequency in Vacuo
				$\lambda +$	$\frac{1}{\lambda} -$	
§2227·9	2n	2227·8 T. & S.	2228·4 H. & A.	0·67	13·6	44871·7
§2227·0	3n	2226·9 „	2227·3 „	„	„	44889·9
2225·8	2s	2225·7 „	2226·3 „	„	13·7	44914·0
§2224·9	2s	2224·8 „		„	„	44932·1
§2218·2	6s	2218·2 „	2219·6 „ 2218·8 „	„	„	45067·9
§2215·4	3s	2215·3 „	2216·8 „ 2216·1 „	„	„	45124·9
2214·6	3s	2214·4 „	2214 4 „	„	13·8	45141·1
2212·9	1s	2213·0 „	2211·6 „	„	„	45175·8
§2210·4	5s	2210·3 „	2211·1 „ 2209·1 „	„	„	45226·9
§2200·7	1s	2200·6 „	2200·6 „	„	13·9	45426·2
2199·8	3s	2199·8 „	2200·1 „	„	„	45444·8
§2195·9	3s	2195·9 „	2196·8 „	„	„	45525·5
§2192·4	5s	2192·4 „	2192·3 „ 2191·5 „	„	14·0	45598·1
§2189·8	5s	2189·9 „	2189·9 „ 2188·8 „	„	„	45652·3
2183·0	1s			„	„	45794·5
2181·8	1s	2181·8 „	2181·3 „	„	„	45819·7
§2179·45	5s	2175·5 „	2179·3 „ 2178·3 „	0·66	14·1	45869·0
2175·15	3s	2175·2 „	2174·8 „	„	„	45959·7
2165·2	1s			„	14·2	46170·9
§2161·6	1s			„	„	46247·8
2157·5	2s			„	14·3	46335·6
§2152·0	3s			„	„	46454·1
§2149·05	4s	2149·2 „	2149·1 „	„	„	46517·9
2147·2	2n			„	14·4	46557·9
2145·7	2n			„	„	46590·4
2144·9	1n			„	„	46607·8
§2136·1	3s	2136·1 „	2136·1 „	„	14·5	46799·8
§2134·6	2s	2134·6 „	2134·5 „	„	„	46832·7
2130·2	1n			0·65	„	46929·5
§2126·1	3s	2126·2 „		„	14·6	47019·9
2125·3	3s	2125·3 „	2124·7 „ 2124·3 „	„	„	47037·6
§2123·06	3s	2122·4 „	2122 4 „ 2121·8 „	„	„	47087·2
§2117·4	2s	2117·5 „	2116·3 „	„	„	47213·1
§2112·20	2s	2112·2 „	2112·5 „	„	14·7	47329·3
§2104·88	2s	2104·9 „	2103·3 „	„	14·8	47493·8
2098·7	2b	2098·6 „		„	„	47633·7
2093·1	1s	2093·9 „		„	1·49	47761·1
2088·2	2s	2088·1 „		„	„	47873·2
2085·4	3s	2085·5 „		„	1·50	47937·4
2079·0	2s	2078·8 „		„	„	48085·0
2070·4	1n			0·64	15·1	48284·7
2066·5	1n	2067·0 „		„	„	48375·9
2062·7	1n	2062·7 „		„	15·2	48465·0
2055·1	2s	2055·1 „		„	15·3	48644·1
2044·0	2s	2044·0 „		„	15·4	48908·3
2037·28	2s	2037·3 „		„	„	49069·7
2036·0	2s	2036·0 „		„	15·5	49100·4

COPPER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
2031·3	2b	2030·9 T. & S.	0·64	15·5	49214·1
2025·7	2s	2025·7 ,,	0·63	15·6	49350·1
2017·3	2s		,,	1·57	49555·5
2016·0	2s	{ 2016·0 ,, 2015·8 ,,	,,	,,	49587·5
2014·2	1s		,,	,,	49631·8
2013·19	1n	2013·2 ,,	,,	,,	49656·7
1999·68	2s	1999·9 ,,	,,	15·8	49992·2
1989·24	2s	1989·4 ,,	,,	16·0	50254·5
1979·26	2s	1979·4 ,,	,,	16·1	50507·8
1970·5	1s	1970·4 ,,	,,	16·2	50732·3
1943·88	1s	1944·1 ,,	,,	16·5	51427·0

§ Observed also by Exner and Haschek, who give also the following lines: 4590·2, 4552·5, 4525·5, 4520·3, [4513·5], 4494·6, 4485·7, 4458·2, 4437·5, 4420·8, 4396·2, 4384·6, 4355·5, 4348·2, [4329·0, 4253·8], 4182·9, 4144·2, [4057·1, *4003·1*], 3973·45, *3964·6*, 3940·6, 3928·6, [3925·3, 3921·3], 3907·6, 3866·1, 3851·1, 3848·1, 3842·8, [3825·3, *3820·9*], 3810·3, [3759·6, 3711·9], *3695·4*, [3684·8], 3681·5, [3677·0], 3676·8, [3671·8, 3665·8, *3664·2*], [3655·9, 3652·3, 3648·4], *3629·8*, 3589·1, [3546·4, 3545·0], 3529·3, 3514·6, [3500·3, 3498·3], 3492·1, [3487·8], 3465·8, 3459·7, 3440·8, [3422·3, 3420·4, 3395·4, 3384·9, 3375·6], 3344·7, [3342·6], 3327·2, 3324·2, 3322·9, 3321·9, 3318·8, 3315·6, 3301·2, 3293·9, 3288·4, 3284·5, [3282·7, 3277·4], 3276·4, 3268·4, 3262·7, 3238·9, 3234·1, 3228·2, 3220·9, [3211·7], 3207·4, 3201·8, 3192·2, 3189·4, 3187·8, 3186·2, 3184·7, 3181·7, [3176·0], 3171·4, 3168·4, 3165·5, [3160·2], 3158·9, 3157·5, 3156·9, 3154·7, [3151·6], 3149·7, 3147·9, 3144·9, 3138·4, 3135·2, 3132·4, [3128·9, 3120·6], 3118·3, [3113·6], 3105·1, 3103·7, 3100·1, [3094·1], 3082·7, 3081·8, 3065·9, 3055·9, 3053·9, 3047·1, 3038·5, [3025·0], 3023·5, [3022·7, 3021·7], 3015·0, [3012·0], 2989·2, 2983·9, [2978·4], 2874·4, 2858·2, 2762·9, 2735·6, 2731·9, 2725·7, 2647·7, 2646·4, 2621·0, 2602·8, 2388·3, 2387·3, 2365·7, 2279·8, 2273·3, 2269·1, 2250·3, 2246·0, 2176·5.

Those enclosed within brackets occur in Kayser and Runge's list of arc lines (Appendix E, p. 7), and those in italics in Crew and Tatnall's list of arc lines, whose values are 4003·18, 3964·27, 3820·97, 3695·48, 3664·21, 3629·9. (See pp. 36 and 68.)

NOTE.—The spark employed by Eder and Valenta was of extraordinary power from a large Ruhmkorff coil, actuated by a current of 8 amperes at 110 volts in combination with a large condenser.

The number of lines observed is thus greatly in excess of the number of those observed by Thalén and other observers.

SILVER (SPARK SPECTRUM).

Eder and Valenta: 'Denkschr. kaiserl. Akad. Wissensch. zu Wien,' 1896.
Exner and Haschek: 'Sitzber. kaiserl. Akad Wissensch. Wien,' civ. (1895), cv., cvi. (1896).

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
6037·3	2n	6037·4 Thalén	1·64	4·5	16559·2
5678·7	1n		1·55	4·8	17604·9
*5667·9	1n		,,	,,	17638·4
5656·99	1b		1·54	,,	17672·4
5646·50	1n	5646·3 ,,	,,	,,	17705·3
5628·40	2n	5627·2 ,,	,,	,,	17762·2

* Observed by Kayser and Runge in the Arc spectrum.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5623·34	4b	5624·0 Thalén	1·53	4·8	17778·2
5621·25	2b		„	„	17784·8
5611·85	2b	5612·0 „	„	„	17814·6
5602·93	1b		„	4·9	17842·9
5597·99	1b		„	„	17858·7
5593·11	3b	} 5591·4 „	„	„	17874·2
5590·37	2n		1·52	„	17883·0
5580·89	1n		„	„	17913·4
5575·21	1n		„	„	17931·6
5570 63	2b	5569·4 „	„	„	17946·4
5558·98	3b	5557·6 „	„	„	17984·0
5552·79	4b	5552 6 „	1·51	„	18004·1
*5544·5	1n		„	„	18031·0
5535·41	2b		„	„	18060·6
5533·48	1b		„	„	18066·9
5530·23	1b		„	„	18077·5
5528·72	1b		„	„	18082·5
5521·25	4b	5523·2 „	„	„	18106·9
5494·75	1b		1·50	5·0	18194·2
5489·06	3b	5487·6 „	„	„	18213·1
5480·81	3b		„	„	18240·5
5479·34	2s		„	„	18245·4
*5471·70	5s	5471·5 „	1·49	„	18270·9
*5465·64	10s	5465·3 „	„	„	18291·1
5454·41	3s		„	„	18328·8
5450·42	3s		„	„	18342·2
5424·9	1n	5424·6 „	1·48	„	18428·5
5412·62	1n	5412·2 „	„	„	18470·3
5404·13	2b		„	„	18499·4
5401·10	2b	5402·7 „	1·47	5·1	18509·6
*5209·19	8s	5209·8 „	1·42	5·2	19191·6
*4874·42	2s	4874·9 „	1·33	5·6	20509·7
4678·23	4b		1·28	5·9	21369·7
4678·04	2b		„	„	21370·6
§*4668·58	2s	4667·6 „	„	„	21413·9
4630·10	3s		1·27	6·0	21591·8
4620·57	2s		„	„	21636·4
4620·08	2s		„	„	21638·6
*4616·0	1n		1·26	„	21657·8
*4556·09	2b		1·25	6·1	21942·5
4552·41	1b		„	„	21960·3
4511·39	1s		1·24	„	22120·8
§4509·84	1s		„	„	22167·6
§*4476·31	5s		1·23	6·2	22333·6
4447·08	2s		1·22	„	22480·5
§*4396·30	1n	4396·8 Lecoq de B.	1·21	6·3	22740·1
4394·11	2s		„	„	22751·4
§4385·16	4s		1·20	„	22797·9
4363·46	2s		„	6·4	22911·2
4358·14	1s		„	„	22939·2
§*4311·35	4n		1·18	„	23188·2
§4226·55	4s		1·16	6·6	23653·4
§*4212·76	2s	4212·0 L. & D.	„	„	23730·8
4210·87	8s	4208·5 Lecoq de B.	„	„	23741·5
§4085·92	2s		1·12	6·9	24467·4

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
§*4055·46	6s	4053·9 L. & D.	1·12	6·9	24651·2
4046·45	2s		1·11	7·0	24706·0
3994·96	1s		1·10	7·1	25024·4
§3985·18	3s		,,	,,	25085·9
§*3981·35	2s		,,	,,	25110·0
§3968·34	5s		1·09	,,	25192·4
3961·27	2s		,,	,,	25237·3
§3933·60	5s		1·08	7·2	25414·8
§3919·95	1s		,,	,,	25503·3
3918·41	1n		,,	,,	25513·4
§*3914·01	1n		,,	,,	25542·0
§*3607·76	2b		,,	7·3	25582·8
§*3840·74	1s		1·06	,,	26029·4
§3838·38	1n		,,	,,	26045·4
§*3810·86	3s		1·05	7·4	26233·4
3714·37	1s		1·03	7·6	26914·9
§3683·40	2s		1·02	7·7	27141·1
*3682·49	1s		,,	,,	27147·8
3649·97	2n		1·01	,,	27389·8
§3616·20	1n		1·00	7·8	27645·5
§3596·38	1s		,,	,,	27797·9
§3580·77	1n		,,	7·9	27919·1
§*3542·65	3s	3542·3 H. & A.	0·99	8·0	28219·5
§3513·44	1n		0·98	,,	28454·1
3503·05	1n		,,	8·1	28538·5
§*3502·02	2s		,,	,,	28546·8
§3495·57	1s		0·97	,,	28599·5
§3475·89	3s		,,	,,	28761·5
§3469·52	1s		,,	8·2	28814·2
§3468·0	1n		,,	,,	28826·9
3437·45	1n		0·96	,,	29083·1
§3429·59	2s		,,	8·3	29149·7
3425·56	1n		,,	,,	29184·0
§3421·69	2n		,,	,,	29217·0
3419·43	1n		,,	,,	29236·3
3412·91	1n		0·95	,,	29292·2
§3405·20	3b	3405·2 ,,	,,	,,	29358·6
3401·56	1n		,,	,,	29390·0
3400·34	1n		,,	,,	29400·5
§3397·56	2b		,,	,,	29424·6
3394·05	1n		,,	8·4	29454·9
3392·56	1b		,,	,,	29467·9
3389·44	3s	3391·4 ,,	,,	,,	29495·0
3387·22	1s		,,	,,	29514·3
§*3382·98	10s	3383·5 ,,	,,	,,	29551·3
3376·28	1n		0·94	,,	29610·0
§3373·59	1n		,,	,,	29633·6
§3367·04	2s		,,	,,	29691·3
3864·94	1n		,,	,,	29709·8
3363·69	1n		,,	,,	29720·9
3361·98	1s		,,	,,	29736·0
3361·18	1s		,,	,,	29743·1
3360·36	1s		,,	8·5	29750·2
3358·79	1n		,,	,,	29764·1
3356·90	1n		,,	,,	29780·9

§ 3683·48, 3542·72, 3383·02, Exner and Haschek.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3354·41	2n		0·94	8·5	29803·0
3353·45	2n		,,	,,	29811·5
§3352·16	4s	3353·5 H. & A.	,,	,,	29823·0
3347·60	1s		,,	,,	29863·6
§3344·78	2b		,,	,,	29888·8
3343·28	2s		,,	,,	29902·2
3341·34	1s		,,	,,	26919·6
§3339·30	2s		,,	,,	29937·9
§3433·76	2s		0·93	,,	29987·7
§3331·91	3s		,,	,,	30004·3
3330·69	1s		,,	,,	30015·3
§3329·84	1s		,,	,,	30023·0
3325·90	1s		,,	,,	30058·6
3322·93	1s		,,	8·6	30085·3
§3321·81	2s		,,	,,	30095·5
§3318·26	2		,,	,,	30127·7
3316·73	2		,,	,,	30141·6
§3315·54	1n		,,	,,	30152·4
3313·75	1n		,,	,,	30168·7
§3312·65	4s	3313·8 ? ,,	,,	,,	30178·7
3308·58	2s		,,	,,	30215·8
3307·31	2s	3308·4 ,,	,,	,,	30227·5
*3305·32	1n		,,	,,	30245·7
3304·75	1n		,,	,,	30250·9
3304·14	1n		,,	,,	30256·5
§3301·61	5s	3302·8 ,,	0·92	,,	30279·7
§3299·51	4s		,,	,,	30298·9
§3297·74	2s		,,	,,	30315·2
§3295·60	2s		,,	,,	30334·9
3294·40	2s		,,	,,	30345·9
§3293·22	3b	3294·1 ,,	,,	8·7	30356·8
§3289·26	3s	3290·4? ,,	,,	,,	30393·4
3288·0	1s		,,	,,	30404·9
§*3280·80	10s	3281·6 ,,	,,	,,	30471·7
§3274·40	3s	3274·6 ,,	,,	,,	30531·2
3272·16	1n		,,	,,	30552·2
§3270·05	1n		,,	,,	30571·9
§3268·43	1s		,,	,,	30587·0
§3267·40	1s		,,	,,	30596·7
§3266·0	1s	3267·0 ,,	,,	,,	30609·8
§3264·20	2s				30626·7
§3262·75	1s	3262·0 ,,	,,	,,	30640·3
3259·80	1n		0·91	,,	30668·0
§3258·50	1s		,,	,,	30680·3
§3257·36	1s		,,	,,	30691·0
§3256·47	1s		,,	,,	30699·4
§3254·88	1n		,,	,,	30714·4
§3253·80	2s	3253·8 ,,	,,	,,	30724·6
§3252·65	5s		,,	8·8	30735·4
3251·05	1s		,,	,,	30750·5
§3249·78	1s		,,	,,	30762·5
§3249·14	2s		,,	,,	30768·6
§3247·12	3s		,,	,,	30787·7
§3244·77	4s	3245·3 ,,	,,	,,	30810·0
§3241·06	2s double		,,	,,	30845·3

§ 3280·80.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3240·83	2s probably double		0·91	8·8	30847·5
3237·52	1s		,,	,,	30879·0
§3233·69	1s		,,	,,	30915·6
§*3233·07	3s	3233·3 H. & A.	,,	,,	30921·6
§3231·24	2s		,,	,,	30939·1
§3229·90	3s	3230·3 ,,	,,	,,	30951·9
§3228·88	1s		,,	,,	30961·7
§3224·87	1s		,,	,,	31000·2
§3223·37	3s	3223·8 ,,	,,	,,	31014·6
§3221·46	1s		,,	,,	31033·0
§3217·86	1s		0·90	,,	31067·8
§3216·65	4s	3217·5 ,,	,,	,,	31079·4
§3211·86	1n		,,	8·9	31125·7
§3209·92	2s	3209·6 ,,	,,	,,	31144·5
§3208·16	2s				31161·6
§3207·44	2s		,,	,,	31168·6
§3203·63	1s		,,	,,	31205·7
§3200·80	3s	3199·6 ,,	,,	,,	31233·3
§3200·01	1s		,,	,,	31241·0
§3193·34	1s		,,	,,	31306·3
§3191·80	2s	3191·2 ,,	,,	,,	31321·4
§3187·75	2s		,,	,,	31361·2
§3185·08	2s		,,	,,	31387·5
§3184·15	1s	3184·3 ,,	,,	,,	31396·7
§3181·50	2s		0·89	,,	31422·8
§3180·69	2s	3179·7 ,,	,,	9·0	31430·7
§3179·28	2s				31444·7
§3176·22	2n		,,	,,	31475·0
§3173·52	1s	3174·9 ,,	,,	,,	31501·8
§3172·22	1s		,,	,,	31514·7
§3158·73	1s		,,	,,	31649·3
§3153·09	2s		,,	,,	31705·9
§3149·92	1s		,,	,,	31737·8
3142·82	1n		,,	9·1	31809·5
§3142·08	1s		,,	,,	31817·0
§3130·10	2n	§3134·9 ,,	0·88	,,	31938·8
3129·19	1n	3129·2 ,,	,,	,,	31948·1
§3123·97	1n		,,	,,	32001·4
§3117·82	1s		,,	,,	32064·6
3116·93	1s		,,	,,	32073·8
§3115·65	1s		,,	,,	32086·9
§3113·10	1s		,,	9·2	32113·1
§3102·74	1s		,,	,,	32220·4
3098·10	1s		0·87	,,	32268·6
§3096·50	1s		,,	,,	32285·3
§3086·42	2s		,,	,,	32390·8
§3082·95	2s		,,	9·3	32427·2
3081·53	1s		,,	,,	32442·1
§3080·92	1s		,,	,,	32448·5
§3072·76	1n		,,	,,	32534·7
§3064·69	1s		,,	,,	32620·4
§3052·71	1n		0·86	9·4	32748·4

§ 3223·58, 3180·70.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
§3047·04	1s		0·86	9·4	32809·3
§3037·82	1n		„	„	32908·9
3036·03	1n		„	„	32928·4
3035·29	1n		„	„	32936·4
3031·75	1n		„	„	32974·8
3030·51	1n		„	„	32988·3
§3012·85	1s		0·85	9·5	33181·7
3011·89	1s		„	„	33192·2
§3000·67	1n		„	„	33316·4
2999·67	1n		„	„	33327·5
2999·13	1n		„	„	33333·5
2986·20	1s		„	9·6	33477·8
§2982·16	1s		0·84	„	33523 1
2943·93	1n		„	9·8	33958·4
2942·06	1n	2938·0 H. & A.	0·83	„	33980·0
§*2938·53	3b	2934·2 „	„	„	34020·8
§2934·23	4b	2929·1 „	„	„	34070·7
§2929·33	5s	2919·9 „	„	„	34127·7
§2920·0	3s	2902·2 „	„	9·9	34236·7
§2902·08	4s		0·82	„	34448·1
2886·44	5s		„	10·0	34634·7
2883·99	2b		„	„	34664 2
§2878·88	1n		„	„	34725·7
§2873 65	5s	2873·2 „	„	„	34788·9
§2853 0	1n		0·81	10·1	35040·7
2828·74	1n		„	10·2	35341·2
§*2824·06	2n		0·80	„	35399·8
§2815·50	5s	2814·9 „	„	10·3	35507·4
§2802·76	1s		„	„	35668·8
2801·69	1n		„	„	35682·4
§2799·63	5s	2799·3 „	„	„	35708·7
2795 60	4s		„	10·4	35760·1
§2786·53	2n		„	„	35876·5
§2767·60	8s	2766·8 „	0·79	10 5	36121 9
§2756·46	4s	2755·8 „	„	„	36267·9
§2753·3	2s		„	„	36309·6
§2749·4	4s		„	10·6	36361·0
§2746·9	3n		„	„	36394·1
§2746·6	3n		„	„	36398·1
§2744·06	4s		„	„	36431·8
2743 3	2s	2743·3 „	„	„	36441·8
§2740·0	4s		0·78	„	36485·7
2737·2	1n		„	„	36523·1
2727·5	2s		„	„	36653·0
§2721·84	3s	2721·2 „	„	10·7	36729·1
2719·1	1s		„	„	36766·2
2716 3	1s		„	„	36804 1
2714·5	1s		„	„	36828·5
§2711·94	8s	2711·8 „	„	„	36863·3
§2711·34	2s		„	„	36871·4
§2688 40	1n		0·77	10·8	37186·0
2684·8	1s		„	„	37235·9
§2681·43	5s	2681·1 „	„	„	37282·7
2666·4	1 Cu ?		„	10·9	37492·9
2664·6	1n		„	„	37518·2

§· 2938·62, 2934·30, 2929·49, 2920·15, 2902·21, 2873·72, 2815·60, 2799·77, 2767·65, 2756·55, 2744·00, 2721·90, 2712·13, 2681·40.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ +	$\frac{1}{\lambda}$ −	
§2660·52	8s	2660·2 H. & A.	0·77	10·9	37575·7
§2657·0	4b	2656·7 „	„	„	37625·5
2651·3	1s		0·76	11·1	37992·9
§2628·62	1s	2627·7 „	„	„	38031·7
§2625·75	3s		„	„	38073·3
§2621·6	1s		„	„	38133·5
§2617·8	2s		„	„	38188·9
§2614·55	6s	2614·3 „	„	„	38236·4
2613·8	2s		„	„	38247·4
§2612·0	2s		„	„	38273·7
2607·0	2s		0·75	11·2	38347·1
§2606·20	6s	2605·8 „	„	„	38358·8
§2599·26	3s		„	„	38461·3
§2598·79	2s	2598·8 „	„	„	38468·3
§2595·60	1s	2595·3 „	„	„	38515·5
2592·6	1s		„	„	38560·1
2591·4	1s		„	„	38578·0
§2585·8	2s		„	11·3	38661·5
2584·2	2n		„	„	38685·4
§2580·66	8s	2580·5 „	„	„	38738·5
§*2575·5	1n		„	„	38816·1
§2567·0	2s	2566·1 „	„	11·4	38944·6
§2564·34	3s	2563·5 „	0·74	„	38985·0
2563·5	1s		„	„	38997·8
§2562·83	2s	2561·9 „	„	„	39008·0
§2562·6	1s		„	„	39011·5
2556·8	4s		„	„	39100·0
§2553·30	2s	2552·4 „	„	„	39153·6
2538·8	1s		„	11·5	39377·2
2536·7	2s		„	„	39409·8
§2535·50	6s	2534·9 „	„	„	39428·5
2534·5	1s		„	„	39444·0
2533·8	2s		„	„	39454·9
2529·7	1s		„	11·6	39518·8
2526·3	1s		„	„	39572·0
2525·5	1s		„	„	39584·5
§2523·1	1s		„	„	39622·2
2516·2	1s		0·73	„	39730·9
2514·4	1s		„	„	39759·3
2511·9	1s	2506·4 „	„	11·7	39798·8
§2506·74	9s	2506·4 „	„	„	39880·7
§2504·7	1s		„	„	39913·2
2504·1	3s	2504·1 „	„	„	39922·8
2502·3	1n		„	„	39951·5
2498·9	1s		„	„	40005·9
2493·2	2s		„	11·8	40097·3
2490·7	1s		„	„	40137·6
2489·9	1s		„	„	40150·5
2488·2	1s		„	„	40177·9
§2486·6	2s	2486·7 „	„	„	40203·8
§2485·8	3s	2485·7 „	„	„	40216·7
2484·3	1n		„	„	40241·0
§2483·4	1s		„	„	40255·6
§2480·55	5s	2480·1 „	„	„	40301·8
2478·6	1s		„	„	40333·6

§ 2660·58, 2657·00, 2628·75, 2614·70, 2606·22, 2595·80, 2580·82, 2563·08, 2535·41, 2506·69, 2480·50.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
§2477·36	6s	2477·2 H. & A.	0·73	11·8	40353·8
§2473·93	8s	2473·7 ,,	,,	11·9	40409·6
§2472·5	1s		,,	,,	40433·0
§2469·7	2s	2469·6 ,,	0·72	,,	40478·9
§2466·8	1s		,,	,,	40526·4
§2462·25	5s	2462·6 ,,	,,	,,	40601·4
§2461·4	2s		,,	,,	40615·4
§2460·4	4s	2460·1 ,,	,,	,,	40631·9
§2458·9	2s		,,	12·0	40656·6
§2453·36	7s	2453·3 ,,	,,	,,	40748·4
§*2447·94	8s	2447·7 ,,	,,	,,	40838·7
§2446·45	5s	2446 0 ,,	,,	,,	40863·6
2445·6	2s		,,	,,	40877·8
§2444·3	5s	2442·2 ,,	,,	,,	40899·5
§2439·6	1n		,,	12·1	40978·2
§*2437·84	10s	2437·7 ,,	,,	,,	41007·8
2436·5	1n		,,	,,	41030·4
2434·7	1s		,,	,,	41060·7
§2433·6	1s		,,	,,	41079·3
§2432·3	1s		,,	,,	41101·3
§2430·25	2s		,,	,,	41135·9
§2429·6	7s	2430·3 ,,	,,	,,	41146·9
§2428 3	5s	2429·3 ,,	,,	,,	41169·0
§2424·2	1s		,,	12·2	41238·5
§2422·4	3s	2423·1 ,,	,,	,,	41269·2
§2420·10	8s	2420·3 ,,	0·71	,,	41308·4
§2415·43	2s	2416·2 ,,	,,	,,	41388·3
§*2413·20	10s	2414·0 ,,	,,	,,	41426·6
§2411·37	8s	2411·6 ,,	,,	12·3	41457·9
§2410·6	1s	2409·7 ,,	,,	,,	41471 2
2410·2	4s		,,	,,	41478·0
§2409·0	2b		,,	,,	41498·7
2406·6	1s	2406·8 ,,	,,	,,	41540·1
§2405·0	4s	2404·9 ,,	,,	,,	41567·7
§2402·6	3s		,,	,,	41609·3
2399·3	1s		,,	,,	41666·5
§2395·64	5s	2395·9 ,,	,,	12·4	41730·1
§2392·94	2b	2393·6 ,,	,,	,,	41777·2
§2390·56	5s	2391·0 ,,	,,	,,	41818·8
§2387·0	2s		,,	,,	41881·2
2386·6	2s	{ 2386 9 ,, 2386·4 ,,	,,	,,	41888·2
§2383·3	4s	2313·8 ,,	,,	,,	41946·2
§2382·2	3s		,,	12·5	41965 5
2380·9	1s		,,	,,	41988·4
2379·4	1s		,,	,,	42014·9
§*2375·3	2b	2375·9 ,,	,,	,,	42087·4
§2373·8	1s		0·70	,,	42114·0
2368·7	1s		,,	12·6	42204·6
§2365·8	3s	2366·3 ,,	,,	,,	42256·4
2364·9	2s	2364·8 ,,	,,	,,	42272·5
§2364·1	4s		,,	,,	42286·8
§2362·3	4s	2362·8 ,,	,,	,,	42319·0
§2360·4	1n		,,	,,	42353·1
§2358·86	6s	2352·6 ,,	,,	,,	42380·8

§ 2477·35, 2472·82, 2453·40, 2447·98, 2437·90, 2429·75, 2420·18, 2413·27, 2411·45.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum λ+	Reduction to Vacuum 1/λ −	Oscillation Frequency in Vacuo
§2357·94	8s	2358·5 H. & A.	0·70	12·6	42397·3
§2356·8	1n		,,	,,	42417·8
2348·3	2s		,,	12·7	42571·3
§2343·8	1s		,,	,,	42653·1
2343 5	3s	2344·1 ,,	,,	,,	42658·5
§2341·8	2s	2342·5 ,,	,,	,,	42689·5
2340·7	1n		,,	12·8	42709·5
§2339·1	2s	2339·5 ,,	,,	,,	42738·7
2337·9	1s		,,	,,	42760·6
§2332·9	1s		,,	,,	42852 8
*2331·9	2s	2332·8 ,,	,,	,,	42870·7
§2331·34	8s	2332·1 ,,	,,	,,	42881·0
2327·4	1s		,,	12·9	42953·5
§2325·0	4s	2326·3 ,,	0·69	,,	42997·8
§*2324·69	8s	2325·8 ,,	,,	,,	43003·6
2321·6	2s	2322·8 ,,	,,	,,	43060 8
§*2320·24	8s	2321·1 ,,	,,	,,	43086·1
2319·2	1n	2320·0 ,,	,,	,,	43105·4
§2318·6	1s		,,	,,	43116·6
§*2317·03	8s	2317·9 ,,	,,	,,	43145·8
2316·1	1n		,,	,,	43163·1
§*2309·7	4b	2310·5	,,	13·0	43282·7
§2296·8	2s	2297·0	,,	13·1	43525·7
§2296·1	2s		,,	,,	43539·0
§2291·0	1s		,,	,,	43636·0
§2286·5	3s	2287·0	,,	13·2	43721·8
§2282·5	2s		,,	,,	43798·4
§2280·0	8s	2281·3	,,	,,	43846·4
§2278·9	4s	2278·0	,,	,,	43867·6
§2277·4	2s		0·68	,,	43896·5
§2275·4	5s	2275·8	,,	13·3	43935·0
§2273·3	2s		,,	,,	43975·6
§2257·3	1s		,,	13·4	44287·3
§2253·5	4s	2254·4 ,,	,,	,,	44362·0
§2250·2	1s		,,	13·5	44427·0
§*2248·80	6s	2250·2 ,,	,,	,,	44454·7
§*2246·46	5s	2247·9 ,,	,,	,,	44501·0
§2243·5	2n		,,	,,	44559 7
§ 2241·9	1n		,,	,,	44591·5
§ 2241·4	2n		,,	,,	44601·5
§2240·5	2b		,,	,,	44619·4
§2238·5	2s		,,	13·6	44659 2
§ 2229·6	5s	2230·9 ,,	0·67	,,	44837·5
2228·7	3s		,,	,,	44855·6
§2226·2	6s		,,	13·7	44905·9
2223·2	1s		,,	,,	44966·5
2220·9	1n		,,	,,	45013·1
§2219·7	1s		,,	,,	45037·4
§2211·3	3s		,,	13·8	45208 5
§2208·6	3s		,,	,,	45263·8
§2206·2	3s	2206·3 ,,	,,	,,	45313·0
§2204·7	1n		,,	,,	45343·8
§2203·7	2s		,,	13·9	45364·3
§2202·3	3n	2202·3 ,,	,,	,,	45393·2
§2192·1	1n		,,	14·0	45604·4

§ 2358·01, 2331·45, 2320·28, 2317·10, 2280·08.

SILVER (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ +	$\frac{1}{\lambda}$ −	
§2187·0	3s	2186·3 H. & A.	0·67	14·0	45710·7
2173·6	1n		0·66	14·1	45992·5
2171·9	1n		,,	,,	46028·5
§2171·0	1n		,,	,,	46047·6
§2169·6	1n		,,	14·2	46077·2
§2166·6	4s	2166·1 ,,	,,	,,	46141·1
§2162·1	2s	2161·6 ,,	,,	,,	46237·1
§2149·3	1s		,,	14·3	46512·5
§2145·71	3s	2145·7 ,,	,,	14·4	46590·2
2144·9	1s		,,	,,	46607·8
§2129·3	1s		0·65	14·5	46949·3
§2125·5	1b		,,	14·6	47033·2
§2120·5	4s	2119·3 ,,	,,	,,	47144·1
§2113·9	3s	2112·3 ,,	,,	14·7	47291·2
2106·7	2s		,,	,,	47452·9
2084·3	1b		,,	15·0	47962·7
2081·5	1b		,,	,,	48027·3
2075·9	1b		,,	,,	48156·9
2066·2	4s		0·64	15·1	48382·9
2056·9	1		,,	15·2	48601·7
2053·9	1n		,,	15·3	48672·6
2053·2	1n		,,	,,	48689·2
2033·1	2n		,,	15·5	49170·5
2016·1	2s		0·63	15·7	49585·0
2000·6	2s		,,	15·8	49969·2
1999·6	2s		,,	,,	49994·2
1993·5	1s		,,	15·9	50147·1
1975·2	1s		,,	16·1	50611·7

§ Observed also by Exner and Haschek, who give also the following lines: 4443·4, 4411·0, 4355·4, 4336·8, 4209·4, 4182·7, 4159·2, 4113·7, 4081·7, 4057·9, 4054·9, 4045·7, 3973·40, 3949·5, [3943·0], 3863·8, 3860·0, 3856·5, 3851·0, 3848·0, 3843·0, 3830·3, 3825·9, 3820·4, 3815·8, 3759·8, 3758·5, 3745·8, 3740·3, 3737·3, 3735·0, 3732·5, 3720·1, 3709·5, 3674·0, 3655·0, 3623·5, 3619·0, 3570·4, [3557·2], 3519·0, [3505·3, 3499·9], 3471·0, 3445·7, 3390·0, 3245·9, 3236·5, 3227·9, 3216·8, 3198·1, 3196·1, 3185·8, 3177·7, 3175·2, [3170·5], 3167·9, 3166·3, 3157·6, 3155·8, 3155·3, 3146·3, 3142·6, 3122·8, 3114·6, 3101·7, [3099·3], 3094·8, 3093·1, 3092·0, 3067·9, 3067·0, 3051·1, 3047·6, 3038·3, 3034·2, 3028·6, 3024·1, 3021·2, 3020·8, 3010·8, 3009·3, 3002·6, 2994·4, 2990·6, 2983·6, 2973·3, 2967·1, 2949·1, 2930·1, 2896·59. 2885·6, 2882·3, 2877·8, 2872·1, 2870·6, 2863·5, 2862·3, 2857·3, 2852·1, 2849·6, 2848·3, 2845·0, 2844·1, 2840·0, 2837·8, 2837·2, 2820·9, 2775·2, 2761·8, 2735·8, 2732·6, 2708·5, 2707·4, 2704·6, 2675·9, 2659·3, 2637·6, 2620·8, 2619·5, 2617·2, 2602·1, 2560·8, 2559·0, 2557·5, 2505·6, 2501·4, 2499·8, 2497·3, 2471·5, 2470·6, 2468·8, 2465·6, 2463·8, 2456·7, 2449·7, 2431·5, 2422·0, 2408·0, 2394·1, 2392·5, [2374·8], 2367·2, 2361·2, 2355·6, 2355·1, 2354·7, 2328·2, 2323·5, 2313·8, [2312·5], 2289·8, 2283·2, 2281·7, 2277·7, 2272·4, 2265·3, 2256·7, 2252·0, 2233·8, 2233·1, 2232·8, 2219·0, 2196·6, 2190·0, 2181·8, 2164·0, 2163·2, 2148·9, 2147·5, 2143·1, 2138·3.

Numbers within brackets are lines which occur in Kayser and Runge's list of arc lines (Appendix E, p. 13).

Gold (Spark Spectrum).

Eder and Valenta: 'Denkschr. kaiserl. Akad. Wissench. zu Wien,' 1896.

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*6278·37	3	6277·8 Thalén, &c.†	1·71	4·3	15923·4
5961·40	2	5961·2 " †	1·62	4·6	16770·0
*5957·24	2	5956·7 " †	"	"	16781·7
5921·43	1n	5920·8 Huggins †	1·61	"	16883·2
5881·57	1b	5881 " †	1·60	"	16997·7
*5863·23	3s	5863 " †	"	"	17050·8
*5837·69	6s	5837·7 Thalén, &c.†	1·59	4·7	17125·4
5819·64	1n		"	"	17178·5
5789·11	2b	5791 Huggins	1·58	"	17269·1
5767·46	1n		1·57	"	17334·0
5762·21	1n		"	"	17349·7
5760·14	5s	5759·2 "	"	"	17356·0
5742·25	2b		"	"	17410·1
5732·52	2n		1·56	"	17439·6
5730·88	1n		"	"	17444·6
5727·11	3s	5725·8 Lecoq de Boisbaudran †	"	"	17456·1
5711·14	4b		"	4·8	17504·8
5692·49	1n		1·55	"	17562·2
5688·70	3s		"	"	17573·9
5679·65	1n		"	"	17601·9
5666·82	1n		"	"	17641·8
5662·90	1n		1·54	"	17654·0
*5655·95	6s	5654·2 Huggins †	"	"	17675·7
5651·02	1n		"	"	17691·1
5649·44	1n		"	"	17696·1
5648·11	1b		"	"	17700·2
5645·91	3b		"	"	17707·1
5644·51	3n		"	"	17711·5
5641·61	3s		"	"	17720·6
5619·99	1n		1·53	"	17788·8
5600·36	2b		"	4·9	17851·1
5598·48	4n		"	"	17857·1
5594·50	3b		"	"	17869·8
5593·93	3s		"	"	17871·6
5591·49	2b		"	"	17879·4
5588·08	4b		1·52	"	17890·3
5585·87	1n		"	"	17897·4
5578·72	5b	5581·3 " †	"	"	17920·4
5576·42	1b		"	"	17927·8
5566·92	1n		"	"	17958·4
5565·38	2b		"	"	17963·3
5559·82	3s		"	"	17981·3
5550·47	1s		1·51	"	18011·6
5543·93	4n		"	"	18032·8
5532·69	3s		"	"	18069·5
5520·67	3s		"	"	18108·8
5514·60	1n		1·50	"	18128·8
5511·70	1n		"	"	18138·3

* Observed in the Arc Spectrum by Kayser and Runge.

† Observed also by Krüss, 'Untersuchungen über das Atomgewicht des Goldes, Munich,' 1886.

‡ These lines appear only in very powerful sparks.

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
5506·42	1n		1·50	4·9	18155·7
5495·86	1n		,,	5·0	18190·5
5487·87	1n		,,	,,	18217·0
5465·87	1n	†	1 49	,,	18290·3
5428·64	3s		1·48	,,	18415·8
5423·66	1bn		,,	,,	18432·7
5418·77	1bn	5419 L. de B.	,,	,,	18449·4
5413·42	3s		,,	,,	18467·6
5409·80	1s		,,	,,	18480·0
5394·69	3n		1·47	5·1	18531·6
5383·73	1n		,,	,,	18569·4
5381·38	2n		,,	,,	18577·5
5363·63	2n		1·46	,,	18639·0
5355·05	2n		,,	,,	18668·9
5351·36	1n		,,	,,	18681·7
5269·41	1b		1·44	5·2	18972·3
5265·83	1b		,,	,,	18985·2
5262·05	3s	5260 ,,	,,	,,	18998·8
*5230·53	8s	5231·1 Thalén, &c.	1 43	,,	19113·3
5203·21	1s		1·42	5·3	19213·6
5147·76	3s		1·41	,,	19420·6
5142 62	1n	5144 L. de B.	,,	,,	19440·0
5108·20	2n		1·40	5·4	19571·0
5087·87	1b		1·39	,,	19649·2
*5064·76	5s	5067·6 Huggins †	,,	,,	19738·9
5041 83	1n		1·38	,,	19828·7
5016·51	1n		1·37	5·5	19928·7
5005·10	2s		,,	,,	19974·1
5001·39	2s		,,	,,	19988·9
4973·63	1n		1·36	,,	20100·5
4949 05	2n		1·35	,,	20200·4
4920·50	2s		,,	5·6	20317·5
4902·45	4s		1·34	,,	20392·4
4828·70	1s		1·32	5·7	20703·8
4813·58	2n		,,	,,	20768·9
4811·57	5s	4812 ,,	,,	,,	20777·5
*4792·79	8b	4792·7 Thalén	1·31	,,	20859·0
4760·34	2s		1·30	5·8	21001·1
4753·90	3s		,,	,,	21029·6
4715·43	1s		1·29	,,	21201·2
4712·92	2s		,,	,,	21212·5
4701·63	2s		,,	5·9	21263·3
4698·50	3s		,,	,,	21277·5
4696 12	2s		,,	,,	21288 3
4686·96	1s		1·28	,,	21329·9
4684·30	6s		,,	,,	21342·0
4683·84	6s		,,	,,	21344·1
4679·21	1s		,,	,,	21365·2
4673·24	6s		,,	,,	21392·5
4649·96	3b		1·27	,,	21499·7
4646·26	3s		,,	,,	21530·7
4640·72	1s		,,	,,	21542 5
4637·37	3s		,,	,,	21558·0
4633·23	3s		,,	6·0	21577·2
4630·58	3s		,,	,,	21589·6

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4627·98	3s		1·27	6·0	21601·7
4622·02	2b		,,	,,	21629·6
4614·85	2s		1·26	,,	21663·2
4614·19	1s		,,	,,	21666·3
4611·98	1s		,,	,,	21676·7
4607·80	6s	4609 L. de B.†	,,	,,	21696·3
4601·57	2s		,,	,,	21725·7
4587·91	7b		,,	,,	21790·4
4583·87	3s		,,	,,	21809·6
4582·05	4s		,,	,,	21818·3
4577·74	2s		1·25	,,	21838·8
4576·15	2s		,,	,,	21846·4
4573·14	1s		,,	,,	21860·8
4570·85	1s		,,	,,	21871·8
4559·05	6b		,,	6 1	21928·3
4549·64	6b		,,	,,	21973·7
4543·86	3b		,,	,,	22001·6
4541·40	4s		1·24	,,	22013·5
4523·20	4n		,,	,,	22102·1
4492·49	2n		1·23	6·2	22253·2
*4488·43	8s	4489·8 Huggins†	,,	,,	22273·3
*4437·37	4s	4437·7 L. de B.†	1·22	,,	22529·7
4420·69	3s		1·21	6·3	22614·6
4410·55	2n		,,	,,	22666·6
4395·72	3n		,,	,,	22743·1
4382·25	2n		1·20	,,	22813·0
4373 70	2s		,,	,,	22857·6
4370·46	8s		,,	,,	22874·6
4328·65	1s		1·19	6·4	23095·5
4315·34	8s	4315 ,, †	1·18	,,	23166·7
4310·70	1n		,,	,,	23191·7
4309·21	1n		,,	,,	23199·7
4303·15	1n		,,	6·5	23232·3
4292·80	1s		,,	,,	23288·3
4290·20	1n		,,	,,	23302·4
4280·60	1n		1·17	,,	23354·7
4279·24	1n		,,	,,	23362·1
4276·0	1n		,,	,,	23379·8
4260 01	2s		,,	,,	23467·6
4255·0	3n		,,	,,	23495·3
*4241·95	3n		1·16	6·6	23567·5
4221·87	2b		,,	,,	23679·6
4219·11	1b		,,	,,	23695·1
4211·0	2b		,,	,,	23740·7
4199·54	2b		1·15	6·7	23805·4
4186·29	2b		,,	,,	23880 8
4184·65	1b		,,	,,	23890·2
4175·28	3b		,,	,,	23943·8
4172·90	2b		,,	,,	23957·5
4171·42	2b		,,	,,	23966·0
4170·0	1b		,,	,,	23974·1
4142·30	1n		1·14	6·8	24134·4
4128·80	1n		1·13	,,	24213·3
4126·31	2n		,,	,,	24227·9
4118·52	1n		,,	,,	24273·8

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
4089·95	2n		1·12	6·9	24443·3
*4084·31	4s		,,	,,	24477·0
4076·60	3s		,,	,,	24523·3
4070·76	1s		,,	,,	24558·5
*4065·20	10s	4064·6 L. de B.	,,	,,	24592·1
4053·0	6s		1·11	,,	24666·2
*4041·07	4s		,,	7·0	24738·9
4028·66	2s		,,	,,	24815·1
4021·83	1n		,,	,,	24857·3
4020·86	1n		,,	,,	24863·3
4016·27	8s		,,	,,	24891·7
4012·87	2s		1·10	,,	24912·8
4010·63	1s	4009 Krüss	,,	,,	24926·7
4002·57	3s		,,	7·1	24976·8
4001·60	3s		,,	,,	24982·9
3996·96	1s		,,	,,	25011·9
3991·64	1s		,,	,,	25045·3
3990·0	1s		,,	,,	25055·6
3986·48	1n		,,	,,	25077·7
3986·04	1n		,,	,,	25080·5
3984·18	1n		,,	,,	25092·2
3982·87	2n		,,	,,	25100·4
3979·72	3n		,,	,,	25120·3
3976·80	3n		,,	,,	25138·7
3971·80	3n‡		1·09	,,	25170·4
3959·35	5s‡		,,	,,	25249·6
3950·19	2s		,,	7·2	25308·0
3945·69	2n		,,	,,	25336·9
3945·19	1n		1·08	,,	25340·1
3937·80	1n		,,	,,	25387·7
3936·42	1n		,,	,,	25396·6
3933·16	4s		,,	,,	25417·6
3927·82	3s		,,	,,	25452·2
3922·66	1s		,,	,,	25485·7
3920·28	1s		,,	,,	25501·2
3919·08	1n‡		,,	,,	25509·0
3916·15	6s‡		,,	,,	25528·1
3915·03	2s		,,	,,	25535·4
*3909·60	3s		,,	,,	25570·9
3903·47	2s		,,	7·3	25610·9
3900·72	2s		,,	,,	25629·0
*3898·03	10s		,,	,,	25646·7
3895·65	1n		1·07	,,	25662·4
3893·52	1n		,,	,,	25676·4
3892·65	3s		,,	,,	25682·1
3889·58	2n		,,	,,	25702·4
3880·34	3s		,,	,,	25763·6
3877·45	4s‡		,,	,,	25782·8
3874·96	4s		,,	,,	25799·4
3872·81	2s‡		,,	,,	25813·7
3868·50	2n		,,	,,	25842·5
3865·70	4s		,,	,,	25861·2
3859·53	3s‡		,,	,,	25902·6
3856·60	2n		1·06	,,	25922·3
3853·76	6s‡		,,	,,	25941·4

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
3845·02	4s‡		1·06	7·3	26000·4
3839·60	1s‡		,,	,,	26037·1
3838·66	1s‡		,,	,,	26043·5
3837·70	1n‡		,,	,,	26050·0
3834·42	1n‡		,,	,,	26072·3
3831·31	4s‡		,,	,,	26093·4
3829·52	3s‡		,,	,,	26105·6
3828·56	2s‡		,,	,,	26112·2
3825·87	8s‡		,,	,,	26130·5
3823·20	4s‡		,,	,,	26148·8
3822·11	6s‡		,,	,,	26156·3
3820·45	2s‡		,,	,,	26167·6
3816·50	5s		1·05	7·4	26194 6
3814·30	2n‡		,,	,,	26209·7
3811·60	2n‡		,,	,,	26228 3
3810·41	2n‡		,,	,,	26236·5
3806·95	2b‡		,,	,,	26260·3
3804·22	4s		,,	,,	26277·2
3800·75	3s‡		,,	,,	26303·2
3799·44	2n‡		,,	,,	26312·3
3796·15	3n		,,	,,	26335·1
3787·37	2s‡		,,	,,	26396·2
3783·30	2s‡		,,	,,	26424·6
3780·13	5s‡		,,	,,	26446·7
3777·25	2s‡		,,	,,	26466·9
3773·31	4s‡		1·04	,,	26494·4
3771·12	3s‡		,,	7·5	26509·8
3770·14	4s‡		,,	,,	26516·7
3765·76	4s‡		,,	,,	26547·6
3765·10	3s‡		,,	,,	26552·2
3763 10	2s‡		,,	,,	26566·3
3759·03	3s		,,	,,	26595·1
3754·85	3s		,,	,,	26624·7
3752·90	3s‡		,,	,,	26638·6
3746·5	1n‡		,,	,,	26684·1
3744·54	2s‡		,,	,,	26698·0
3736·82	2s‡		1·03	,,	26753·2
3732·68	2s‡		,,	,,	26782·9
3730·92	2s‡		,,	,,	26795·5
3724·46	2s‡		,,	7 6	26841·9
3718·02	2s		,,	,,	26888·4
3716·89	1s‡		,,	,,	26896·6
3714·96	1s‡		,,	,,	26910·6
3708·30	4s‡		,,	,,	26958·9
3706·99	4s		,,	,,	26968·5
3702·49	3s‡		,,	,,	27001·3
3698·65	2s‡		,,	,,	27029·3
3695·68	2s‡		1·02	,,	27051·0
3694·14	2n‡		,,	,,	27062·3
3691·66	2s‡		,,	,,	27080·5
3690 18	1s‡		,,	,,	27091·3
3687·60	3s‡		,,	,,	27110·3
3686·21	2s‡		,,	,,	27120·5
3684·0	1n‡		,,	,,	27136·8
3681 39	2b‡		,,	7·7	27156·0

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3677·62	1s‡		1·02	7·7	27183·8
3676·62	1s‡		,,	,,	27191·2
3675·11	1s‡		,,	,,	27202·4
3674·0	1s‡		,,	,,	27210·6
3672.93	2s‡		,,	,,	27218·5
3671·34	2s‡		,,	,,	27230·3
3664·61	1s‡		,,	,,	27280·3
3663 70	1s‡		,,	,,	27287 1
3662·57	1s‡		,,	,,	27295·5
3661·79	1s‡		,,	,,	27301 3
3658·05	1s‡		,,	,,	27329·3
3657·35	2s‡		1·01	,,	27334·5
3654·56	1s‡		,,	,,	27355·4
3654·22	2s‡		,,	,,	27357·9
3653·66	3s‡		,,	,,	27362·1
3653·93	2s		,,	,,	27382·6
3649·25	4s‡		,,	,,	27395·2
3647·90	1s‡		,,	,,	27405·3
3642·66	2n		,,	,,	27444·8
3637·57	3s		,,	7·8	27483·1
3635·21	4s		,,	,,	27500·9
3633·40	5s		,,	,,	27514·6
3632·81	2s		,,	,,	27519·1
3631·02	1s‡		,,	,,	27532·7
3627·47	1n‡		,,	,,	27559·6
3625·32	2n‡		,,	,,	27576·0
3623·73	3s‡		,,	,,	27588·1
3622·93	6s‡		,,	,,	27594·2
3620·13	1n		,,	,,	27615·5
3620·11	2n		,,	,,	27615·7
3614·17	3s‡		1 00	,,	27661·1
3610 95	1s‡		,,	,,	27685·7
3607·59	3s		,,	,,	27711·5
3604·94	2s‡		,,	,,	27731·9
3601·17	4s‡		,,	,,	27760·9
3598·28	2n		,,	,,	27783·3
3594·20	2s‡		,,	7·9	27814·7
3591·90	2s‡		,,	,,	27832·5
3586·66	7s		,,	,,	27873·2
3581·45	4n		,,	,,	27913·7
3576·11	1s‡		0·99	,,	27955·4
3573·94	1n		,,	,,	27972·4
3565·99	2s		,,	,,	28034·8
3557·13	2n		,,	,,	28104·7
3555·58	3s‡		,,	,,	28116·9
*3553·72	6s‡		,,	,,	28131·6
3549·26	2s‡		,,	8·0	28166·9
3548·26	1s‡		,,	,,	28174·8
3541·71	3s‡		,,	,,	28227·0
3539·18	3n‡		,,	,,	28247·1
3528·25	2n‡		0·98	,,	28334·7
3523·42	3s‡		,,	,,	28373·5
3516·40	1n‡		,,	,,	28430·2
3515·19	1n‡		,,	,,	28440·0
3506·17	1n‡		,,	8·1	28513·0

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3504·62	1n‡		0·98	8·1	28525·7
3501·85	1n‡		,,	,,	28548·2
3496·08	2s‡		0·97	,,	28595·4
3492·99	1s‡		,,	,,	28620·7
3487·34	1s‡		,,	,,	28667·1
3484·60	1s‡		,,	,,	28689·6
3476·58	1n‡		,,	,,	28755·8
3474·36	1n‡		,,	,,	28774·2
3471·76	1s‡		,,	,,	28795·7
3470·47	1s‡		,,	8·2	28806·3
3452·27	2s‡		0·96	,,	28958·2
3437·32	1s‡		,,	,,	29084·2
3410·97	1n‡		0·95	8·3	29308·9
3400·28	2s‡		,,	,,	29401·0
3398·95	2s‡		,,	,,	29412·6
3393·87	1s		,,	8·4	29456·5
3383·05	3s		,,	,,	29550·7
3382·26	1s		,,	,,	29557·6
3360·47	2n‡		0·94	8·5	29749·2
3358·61	1s		,,	,,	29765·7
3355·35	1s‡		,,	,,	29794·7
3331·74	1s‡		0·93	,,	30005·8
*3320·32	2b		,,	8·6	30109·0
3310·34	2s‡		,,	,,	30199·8
*3308·36	3s		,,	,,	30217·9
3286·56	2b‡		0·92	8·7	30418·3
3280·72	6s		,,	,,	30472·4
3277·88	2n‡		,,	,,	30498·8
3273·84	4b‡		,,	,,	30536·5
3271·63	2b‡		,,	,,	30557·1
3270·17	2b		,,	,,	30570·0
3266·96	4s		,,	,,	30600·8
*3265·18	4s		,,	,,	30617·5
3253·86	2b‡		0·91	,,	30724·0
3251·73	2b‡		,,	8·8	30744·1
3243·34	2b‡		,,	,,	30823·6
*3230·73	8s		,,	,,	30944·0
3228·0	5s‡		,,	,,	30970·1
3223·03	2n		,,	,,	31017·9
3221·94	4s		,,	,,	31028·4
3219·59	3s		0·90	,,	31051·1
3217·69	2s		,,	,,	31069·4
3216·14	2s		,,	8·9	31084·3
3212·0	1s		,,	,,	31124·4
3211·03	4s		,,	,,	31133·8
*3204·75	8s		,,	,,	31194·8
*3194·90	5s		,,	,,	31291·0
3165·02	2s		0·89	9·0	31586·4
3156·73	5s		,,	,,	31669·4
3146·52	3s		,,	9·1	31772·0
3145·77	1s		,,	,,	31779·6
3138·93	3n		0·88	,,	31848·9
3133·18	2n		,,	,,	31907·4
3131·75	1n		,,	,,	31921·9
3129·86	2n		,,	,,	31941·2

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3127·24	4s		0·88	9·1	31968·0
*3122·88	10s		,,	,,	32012·6
*3117·20	3s		,,	,,	32071·0
3106·70	1s		,,	9·2	32179·3
3104·09	2s		,,	,,	32206·4
3093·28	3n		0·87	,,	32318·9
3091·47	1s		,,	,,	32337·9
3045·83	2s		0·86	9·4	32822·4
*3033·35	4b		,,	,,	32957·5
*3029·32	6s		,,	,,	33001·3
3015·93	4s		0·85	9·5	33147·8
*3014·50	2n		,,	,,	33163·5
3001·81	2s		,,	,,	33303·7
2995·13	8s		,,	9·6	33377·9
2990·38	6s		,,	,,	33431·0
2982·21	4s		0·84	,,	33522·6
*2973·63	1n		,,	,,	33619·3
*2970·66	1n		,,	9·7	33652·9
*2963·91	1s		,,	,,	33729·5
2959·90	1n		,,	,,	33775·2
2959·11	1n		,,	,,	33784·2
2954·64	6s		,,	,,	33835·4
*2932·33	5s		0·83	9·8	34092·8
2918·48	4s		,,	9·9	34254·5
*2913·63	10s		,,	,,	34311·5
2907·16	5s		,,	,,	34387·9
*2906·07	3b		,,	,,	34400·8
2893·51	5s		0·82	10·0	34550·1
*2892·05	3s		,,	,,	34567·6
2885·69	3s		,,	,,	34643·8
*2883·60	4s		,,	,,	34668·9
2864·67	1n		0·81	10·1	34897·9
2860·92	1n		,,	,,	34943·7
2857·04	3b		,,	,,	34991·2
2852·71	2b		,,	,,	35044·3
2852·30	1n		,,	,,	35049·3
2847·25	5s		,,	10·2	35111·4
2838·15	7s		,,	,,	35224·0
2835·55	2s		,,	,,	35256·3
2833·20	2s		,,	,,	35285·6
2825·59	6s		,,	,,	35380·6
2822·87	4s		0·80	10·3	35414·6
2820·09	10b		,,	,,	35449·6
2805·45	2s		,,	,,	35634·6
2802·39	10s		,,	,,	35673·5
2795·69	3s		,,	10·4	35758·9
2780·95	3s		0·79	,,	35948·5
*2748·35	5s		,,	10·6	36374·9
2732·17	2s		0·78	,,	36590·3
2721·97	2s		,,	10·7	36727·4
2703·42	2s		,,	,,	36979·5
*2700·99	3s		,,	10·8	37012·7
2699·4	1n		,,	,,	37034·5
2697·8	1s		0·77	,,	37056·4
*2694·40	2s		,,	,,	37103·2

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
2690·5	1n		0·77	10·8	37151·0
*2688·75	4s		”	”	37181·2
2688·24	2s		”	”	37188·3
2687·68	4s		”	”	37196·0
2686·0	1n		”	”	37219·3
2682·3	1n		”	”	37270·6
*2676·05	8s		”	10·9	37357·6
2672·3	1n		”	”	37410·1
2670·7	1n		”	”	37432·5
2667·07	2s		”	”	37483·4
2665·25	3s		”	”	37509·0
2651·2	1s		0·76	11·0	37707·8
2645·5	2b		”	”	37789·0
2641·70	8s		”	”	37843·4
2635·4	1n		”	”	37933·9
2634·4	1n		”	”	37948·3
2631·7	1n		”	11·1	37987·2
2627·15	4s		”	”	38053·0
2625·65	3s		”	”	38074·7
2624·2	2b		”	”	38095·8
2622·0	2n		”	”	38127·7
2617·60	2s		”	”	38191·8
2616·71	4n		”	”	38204·8
2612·8	1n		”	”	38262·0
2611·9	1n		”	”	38275·2
2610·5	1n		”	”	38295·7
2609·6	2b		0·75	”	38309·0
2607·4	1n		”	11·2	38341·2
2605·0	1n		”	”	38376·5
2599·5	2s		”	”	38457·7
2592·0	3s		”	”	38569·0
*2590·23	6s		”	”	38595·4
2583·5	2n		”	11·3	38695·9
2580·1	1n		”	”	38746·9
2579·4	1n		”	”	38757·4
2577·7	1n		”	”	38783·0
2575·3	1n		”	”	38819·1
2571·4	2n		”	”	38878·0
2568·3	1n		”	11·4	38924·9
2565·80	5s		”	”	38962·8
2562·7	2s		0·74	”	39009·9
2561·9	1n		”	”	39022·1
2558·0	2n		”	”	39081 6
2552·92	3s		”	”	39159·4
2553·25	3		”	”	39200·4
*2544·30	5		”	11·5	39292·0
2538·03	4		”	”	39389·1
2537·0	2		”	”	39405·1
2536·1	3		”	”	39419·1
2533·68	6		”	”	39456·8
2528·2	2		”	11·6	39542·2
2522·8	2n		”	”	39626·9
2520·7	2s		0·73	”	39659·9
2517·2	2n		”	”	39715·1
2515·2	3s		”	”	39746·7

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2511·7	1n		0·73	11·7	39802·0
*2510·60	5s		,,	,,	39819·4
2506·4	2s		,,	,,	39886·2
2503·42	8s		,,	,,	39933·7
2495·3	1s		,,	,,	40063·6
2492·7	3b		,,	11·8	40105·3
2491·4	1s		,,	,,	40126·3
2490·4	2s		,,	,,	40142·4
2488·3	2s		,,	,,	40176·3
2483·4	2n		,,	,,	40255·6
2480·4	4s		,,	,,	40304·3
2478·6	1s		,,	,,	40333·6
2477·8	1s		,,	,,	40346·6
2476·2	3b		,,	11·9	40372·6
2468·0	3b		0·72	,,	40506·7
2458·1	3s		,,	12·0	40669·8
2456·6	2b		,,	,,	40694·7
2455·3	2b		,,	,,	40716·2
2452·7	2b		,,	,,	40759·4
2447·9	2s		,,	,,	40839·3
2446·6	1n		,,	,,	40861·0
2445·6	4b		,,	,,	40877·8
2444·3	1b		,,	,,	40899·5
2442·3	2b		,,	12·1	40932·9
2437·8	3s		,,	,,	41008·5
2434·5	1n		,,	,,	41064·1
2433·7	2s		,,	,,	41077·6
2433·3	2s		,,	,,	41084·4
*2428·10	10s		,,	12·2	41172·3
2423·8	2		,,	,,	41245·3
2419·4	4n		0·71	,,	41320·4
2419·1	1b		,,	,,	41325·5
2417·4	2b		,,	,,	41354·6
2416·6	2b		,,	,,	41368·3
2414·7	1n		,,	,,	41400·8
2413·4	3s		,,	,,	41423·1
2411·5	2s		,,	12·3	41455·7
2410·7	1s		,,	,,	41469·4
2408·8	2n		,,	,,	41502·1
2407·5	2n		,,	,,	41524·6
2405·2	3s		,,	,,	41564·3
2402·7	4s		,,	,,	41607·5
2401·5	2s		,,	,,	41628·3
2400·2	1s§		,,	,,	41650·9
2399·3	1s		,,	,,	41666·5
2395·7	1s		,,	12·4	41729·1
2393·7	3s		,,	,,	41763·9
2391·7	1n		,,	,,	41798·9
2388·5	2s		,,	,,	41854·9
*2387·9	4s		,,	,,	41865·4
2384·3	2s		,,	,,	41928·6
2382·6	4b		,,	12·5	41958·5
2380·5	1n		,,	,,	41995·5

§ Coincident with a line of copper.

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}-$	
2379·3	1s		0·71	12·5	42016·7
2377·2	1s		”	”	42053·8
2376·4	5s		”	”	42068·0
2373·4	2n		0·70	”	42121·1
2371·8	4s		”	”	42149·6
2369·5	4n		”	”	42190·5
*2364·8	10s.r.		”	12·6	42274·3
2359·1	1n		”	”	42376·4
2357·9	1n		”	”	42398·0
2355·5	2s		”	”	42441·2
*2352·8	6s		”	12·7	42489·9
2351·5	3s		”	”	42513·3
2348·2	1s		”	”	42573·1
2347·0	2s		”	”	42594·9
2344·3	2s		”	”	42644·0
2343·6	2s		”	”	42656·7
2342·6	1s		”	”	42674·9
2341·5	1s		”	”	42695·0
2340·1	8b		”	12·8	42720·4
2334·1	2b		”	”	42830·3
2332·0	4s		”	”	42868·8
2331·5	2s		”	”	42878·0
2330·7	1s		”	”	42892·8
2326·7	1n		”	12·9	42966·4
2325·8	3s		0·69	”	42983·1
2325·3	2s		”	”	42992·3
2324·7	1s		”	”	43003·4
2322·3	8s		”	”	43047·9
2321·4	1s		”	”	43064·6
2320·4	2s		”	”	43083·1
2318·4	2s		”	”	43120·3
2317·5	1s		”	”	43127·0
2315·9	7s		”	”	43166·9
2314·7	7s		”	”	43189·2
2312·2	2s		”	13 0	43235·9
2309·5	6s		”	”	43286·4
2308·2	1s		”	”	43310·8
2304·7	8b		”	”	43376·6
2301·1	1s		”	13·1	43444·4
2300·4	1s		”	”	43457·6
2298·3	1n		”	”	43497·3
2296·9	2s		”	”	43523·8
2295·1	2s		”	”	43558·0
2294·1	2b		”	”	43577·0
2291·5	6b		”	”	43626·4
2288·7	2s		”	”	43679·8
2287·7	3n		”	13·2	43698·8
2286·9	1n		”	”	43717·9
*2283·4	6s		”	”	43781·1
2283·0	3n		”	”	43788·8
2279·2	2n		”	”	43861·8
2277·6	4n		0·68	”	43892·7
2273·2	1s		”	13·3	43977·5
2270·3	3s		”	”	44033·7
2267·0	2s		”	”	44097·9

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$ −	
2266·0	3b		0·68	13·3	44117·3
2265·3	1n		,,	,,	44131·0
2264·0	3n		,,	,,	44156·3
2262·9	4n		,,	13·4	44177·7
2261·5	2n		,,	,,	44205·0
2260·8	2n		,,	,,	44218·7
2255·8	2n		,,	,,	44316·8
2255·0	1n		,,	,,	44332·5
2253·5	3s		,,	,,	44362·0
2248·9	2n, double ?		,,	13·5	44452·7
2246·7	3n		,,	,,	44496·2
2243·6	1n		,,	,,	44557·7
2242·7	6s		,,	,,	44575·6
2240·4	4n		,,	,,	44621·4
2237·7	2n		,,	13·6	44675·1
2233·8	3n		,,	,,	44753·2
2231·4	4n		,,	,,	44801·3
2229·1	6n		0·67	,,	44847·6
2222·6	2n		,,	13·7	44978·7
2220·5	3s		,,	,,	45019·2
2219·4	2s		,,	,,	45043·5
2215·9	3n		,,	,,	45114·7
2213·2	4s		,,	13·8	45169·6
2210·6	3s		,,	,,	45222·8
2210·3	1s		,,	,,	45228·9
2206·0	3s		,,	,,	45317·1
2201·6	5s		,,	13·9	45407·6
2193·7	1s		,,	,,	45571·2
2192·7	1s		,,	,,	45592·0
2190·7	1s		,,	14·0	45633·5
2189·3	5s		,,	,,	45662·7
2186·9	2s		,,	,,	45712·8
2185·7	2s		,,	,,	45737·9
2184·2	2s		,,	,,	45769·4
2172·3	3s		0·66	14·1	46020·1
2167·7	2s		,,	14·2	46117·6
2160·7	2n		,,	,,	46267·1
2159·2	2n		,,	14·3	46299·2
2157·4	3n		,,	,,	46337·8
2154·4	2n		,,	,,	46402·3
2140·5	1n		,,	14·4	46703·7
2138·0	2b		,,	,,	46758·3
2133·4	1b		,,	14·5	46859·0
2129·7	1b		0·65	,,	46940·5
2126·8	2s		,,	14·6	47004·4
2125·3	5s		,,	,,	47037·6
2113·7	1s		,,	14·7	47295·7
2110·8	9s		,,	,,	47360·7
2098·8	1n		,,	14·8	47631·5
2098·2	1s		,,	,,	47645·1
2095·0	1n		,,	14·9	47717·8
2085·4	1n		,,	15·0	47937·4
2083·1	1s		,,	,,	47990·4
2082·1	8s		,,	,,	48013·4
2071·7	1s		0·64	15·1	48254·4

GOLD (SPARK SPECTRUM)—*continued.*

Wave-length (Rowland)	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2064·0	1s		0·64	15·2	48434·4
2059·9	1s		„	„	48530·8
2056·6	1s		„	„	48608·7
2055·4	1s		„	15·3	48637·0
2044·7	5s		„	15·4	48891·5
2012·3	1n		0·63	15·7	49678·7
2000·7	3s		„	15·8	49966·7
1988·9	1s		„	16·0	50263·0
1977·3	1s		„	16·1	50557·9

Note to Copper Spectrum (p. 36).

Crew and Tatnall have observed the lines in the arc spectrum of copper given by Kayser and Runge (Appendix E, p. 7) from 4003·18 to 3599·20 inclusive. They have also observed the following lines, which are not given by Kayser and Runge or other observers for copper, nor in Kayser and Runge's values for Ag, Au, Sn, Pb, As, Sb, Mg, Ca, Zn, Sr, Cd, Ba, Hg, Li, Na, K, Rb, Cs, or Fe, :

3998·08, 3979·79, 3976·14, 3961·64, 3951·63, 3947·00, 3933·11, 3883·39, 3881·75, 3844·57, 3837·48, 3820·52, 3817·57, 3803·64, 3800·57, 3799·99, 3797·34, 3785·74, 3780·20, 3764·98, 3745·53, 3743·53, 3721·79, 3720·89, 3720·09, 3707·31, 3699·17, 3686·67, 3685·04, 3650·97, 3643·80, 3632·67, 3610·88, 3609·43.

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APPENDIX I.

NOTE.—Unless otherwise stated, all wave-lengths are upon Rowland's scale in air of about 20° C. and 760 mm. pressure. All oscillation frequencies are in vacuo.

COBALT.

Hasselberg: 'Kongl. Svenska Vetenskaps-Akadem. Handl.,' Bd. 28, No. 6, 1896.
Exner and Haschek: 'Sitzber. kaiserl. Akad. Wissensch. Wien,' cv. (2), 1896; cvi. (2), 1897.

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
*5531·06	7		1·51	4·9	18074·8
5525·27	5		,,	,,	18093·7
*5524·24	2		,,	,,	18097·1
*5523·56	6		,,	,,	18099·4
5516·29	3		,,	,,	18123·1
5495·94	4		1·50	5·0	18190·2
5489·90	6		,,	,,	18210·3
*5488·38	3		,,	,,	18215·3
*5484·22	6		,,	,,	18229·1
*5483·57	8	5483·70 Thalén	,,	,,	18231·3
5477·37	4		,,	,,	18251·9
*5477·13	6		,,	,,	18252·7
5470·73	4		1·49	,,	18274·1
5469·55	4		,,	,,	18278·0
*5454·79	7		,,	,,	18327·5
5453·61	2	5453·30 ,,	,,	,,	18331·5
5452·53	3		,,	,,	18335·1
*5444·81	7	5444·30 ,,	,,	,,	18361·1
*5437·25	4		1·48	,,	18390·0
5431·30	3		,,	,,	18406·8
5427·59	2		,,	,,	18419·4
5427·41	2		,,	,,	18420·0
5427·01	2		,,	,,	18421·7
5425·87	3		,,	,,	18425·2
5408·37	3		,,	,,	18484·8
5407·75†	5		,,	,,	18487·0
*5402·24	4		,,	,,	18505·8
5400·03	3		1·47	,,	18513·4
5394·02	2		,,	5·1	18534·3
5391·01	2		,,	,,	18544·3
*5390·71	3		,,	,,	18545·3
*5381·99	5		,,	,,	18575·4
*5381·31	4		,,	,,	18577·7
*5377·99	2		,,	,,	18589·2
5374·21	2		,,	,,	18602·3
*5370·60	2		,,	,,	18614·8

* Coincident with a solar line.
† Solar line double, Co and Mn (Co > Mn).
‡ Observed also by Exner and Haschek in the spark spectrum.

COBALT—*continued*.

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*5369·79††	6s	5369·25 Thalén	1·47	5 1	18617·6
5369·13	3		,,	,,	18619·9
5366·97	3		,,	,,	18627·4
*5362·97	6	5363·75 ,, 63·011 R.	1·46	,,	18641·3
*5359·41	2	5360·75 ,,	,,	,,	18653·7
*5359·16	2		,,	,,	18654·5
5353·69§	3	5353·65 ,,	,,	,,	18673·6
*5352·22	5	5352·45 ,,	,,	,,	18678·7
5349·29	4		,,	,,	18689·0
5347·68	4		,,	,,	18694·6
5344·79	3		,,	,,	18704·7
*5343·58	6	5343·85 ,,	,,	,,	18708·9
*5342·86	8	5343·35 ,,	,,	,,	18711·5
5341·53	5s		,,	,,	18716·1
5339·71	4		,,	,,	18723·5
5337·56	2		,,	,,	18729·9
5336·36	3		,,	,,	18734·2
*5335·06	4 double		,,	,,	18738·8
*5333·85	4		,,	,,	18743·0
*5332·85	4		,,	,,	18746·6
*5331·65	5s		,,	,,	18750·8
5326·49	3		,,	,,	18769·0
5326·15	4		,,	,,	18770·2
*5325·44	5		1·45	,,	18772·7
5321·95	3		,,	,,	18785·0
*5316·96†††	5	5316·955 Rowland	,,	,,	18802·6
*5312·84	5		,,	,,	18817·2
5310·47	3		,,	,,	18825·6
5301·24	5s		,,	5·2	18858·3
5292·45	2		,,	,,	18889·6
5288·02	3		,,	,,	18905·5
5287·78	3		,,	,,	18906·3
*5283·68	3		,,	,,	18921·1
*5280·85	6	5280·69 Thalén	,,	,,	18931·1
5276·38	5	5276·205 Rowland	,,	,,	18947·2
5268·72	5s	5268·79 Thalén	,,	,,	18974·7
*5266·71	6	5266·79 ,,	1·44	,,	18982·0
*5266·51	6		,,	,,	18982·7
*5266·00	3		,,	,,	18984·5
*5257·81	5		,,	,,	19014·1
5254·83	4		,,	,,	19024·9
5250·21	4		1·43	,,	19041·6
*5248·12	5		,,	,,	19049·2
5237·32	2		,,	,,	19088·5
*5235·37	5s	5235·49 ,,	,,	,,	19095·6
*5230·38	5s	5231·09 ,,	,,	,,	19113·9
5222·71	3		,,	,,	19141·9
5219·28	2		,,	,,	19154·7
*5218·42	4		,,	,,	19157·7
*5212·87	5s	5213·09 ,,	1·42	,,	19178·1

§ Solar line double {Co 5353·69. Fe 5353·59.} †† Titanium 5369·81.

††† Solar line double {5316·95, 5316·75}; the corona line.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*5211·08	2		1·42	5·2	19184·7
5210·28	3s		,,	,,	19187·6
*5176·27	5s		,,	5·3	19313·6
5172·49	4n		1·41	,,	19328·7
5166·30	4		,,	,,	19350·9
*5165·32	4		,,	,,	19354·6
5159·03	4n		,,	,,	19378·2
5158·61	4n		,,	,,	19379·8
5156·53	5		,,	,,	19386·8
5155·04	3		,,	,,	19393·2
*5154·26	5	5154·237 Rowland	,,	,,	19396·1
*5153·43	3		,,	,,	19399·3
*5150·03	4		,,	,,	19412·1
*5149·32‖	3		,,	,,	19414·7
*5146·96	6		,,	,,	19423·6
*5145·73	4n		,,	,,	19428·2
*5142·65	3		,,	,,	19439·9
5133·65	6s		1·40	,,	19474·0
*5126·37	5s	5126·369 ,,	,,	,,	19501·7
5125·88	5		,,	,,	19504·5
5124·99	3		,,	,,	19506·9
*5123·01	5		,,	,,	19514·5
*5113·41	5		,,	5·4	19551·0
*5109·08	5		,,	,,	19567·6
*5108·55	2		,,	,,	19569·6
*5105·73	4		,,	,,	19580·4
5100·30	3		1·39	,,	19601·3
*5095·18	5		,,	,,	19621·0
5088·08	3		,,	,,	19648·4
5077·64	3		,,	,,	19688·8
5035·16	2		1·38	,,	19854·9
5034·24	3		,,	,,	19858·6
5033·55	2		,,	,,	19861·3
*5022·37	3		1·37	5·5	19905·4
5007·49	3		,,	,,	19964·6
*4993·27	3		,,	,,	20022·3
4988·15§	5		1·36	,,	20042·0
4986·69	3		,,	,,	20047·9
4980·15	5		,,	,,	20074·2
4974·75	3		,,	,,	20096·0
4972·16	5		,,	,,	20106·5
4971·22	3		,,	,,	20110·3
*4968·09	3n		,,	,,	20123·0
*4967·72	2		,,	,,	20124·5
4966·77	5		,,	,,	20128·3
4959·89	2		,,	,,	20156·2
*4953·37	4		1·35	,,	20182·8
4948·77	3		,,	,,	20201·9
4942·56	2		,,	5·6	20226·8
4941·53	2		,,	,,	20231·0
4936·61	3		,,	,,	20251·2
4935·40	2		,,	,,	20256·2
4933·08	3		,,	,,	20265·7

‖ Also Mn.   § Double.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*4928·48‖	6		1·35	5·6	20284·6
4925·20	3		,,	,,	20298·2
4920·47	4		,,	,,	20317·6
*4912·62	3		1·34	,,	20350·1
4908·68	3		,,	,,	20366·5
4907·78	2		,,	,,	20370·2
4907·30	2		,,	,,	20372·2
4904·37	5		,,	,,	20384·3
4899·72	6		,,	,,	20403·7
4897·36	4		,,	,,	20413·6
*4887·19	4		,,	,,	20456·1
4882·90	6		,,	,,	20474·0
4880·43	2		,,	,,	20484·4
4878·53	3		1·33	,,	20492·4
*4869·59	4		,,	,,	20530·0
*4868·05	10	4867·90 Thalén	,,	,,	20536·4
4863·64	3		,,	,,	20555·1
4862·29	3		,,	,,	20560·4
*4855·86	2		,,	5·7	20587·9
4855·40	3		,,	,,	20589·9
*4843·61	5		,,	,,	20640·1
*4840·42§	9	4839·90 ,,	1·32	,,	20653·7
*4818·13	3		,,	,,	20749·2
*4816·11	4		,,	,,	20757·9
4814·16	6	} 4814·40 ,,	,,	,,	20766·4
*4813·67	9		,,	,,	20768·5
4798·01	3		1·31	,,	20836·3
†4797·93	3		,,	,,	20836·6
4796·46	4		,,	,,	20843·0
4796·00	5		,,	,,	20845·0
*4793·03	8	4792·54 ,,	,,	,,	20857·9
4785·26	5		,,	,,	20891·8
4782·76	3		,,	,,	20902·7
4781·62	6		,,	5·8	20907·9
*4780·14	8	4779·54 ,,	,,	,,	20914·1
*4778·42	5		,,	,,	20921·6
*4776·49	7		,,	,,	20930·1
*4771·27	7		,,	,,	20957·4
*4768·26	6		,,	,,	20966·2
4767·33	5		,,	,,	20970·3
4756·93	4		1·30	,,	21016·2
*4754·59	6		,,	,,	21026·5
*4749·89	9	4749·34 ,,	,,	,,	21047·3
4746·31	4		,,	,,	21063·2
4742·76	2		,,	,,	21079·0
4742·40	2		,,	,,	21080·6
4738·34	2		,,	,,	21098·6
4737·95	5		,,	,,	21100·4
4735·04	5		,,	,,	21113·3
4732·25	3		,,	,,	21125·8
4728·14	6		1·29	5·9	21144·1
4727·95	3		,,	,,	21144·9

‖ See Titanium.

§ Solar line double { Fe 4840·50 / Co 4840·42 { 4814·10 / 4814·35

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
4725·44	2		1·29	5·9	21156·1
4721·61	3		"	"	21173·3
*4718·67	5		"	"	21186·9
4704·57	3		"	"	21250·0
4699·35	4		"	"	21273·6
*4698·60	6		"	"	21277·0
*4697·19	3		"	"	21283·4
‡4693·37	7		"	"	21300·7
4688·68	3		1·28	"	21322·1
4686·05	3		"	"	21334·0
‡*4682·53	8		"	"	21350·1
4680·62	3		"	"	21358·8
4677·73	3		"	"	21372·0
4677·46	3		"	"	21373·3
4676·91	3		"	"	21375·7
4668·04	3		"	"	21416·4
‡4663·58	8		"	"	21436·9
*4657·56	5		"	"	21464·6
4655·01	4		1·27	"	21476·3
4653·93	3		"	"	21481·3
4652·01	3		"	"	21490·2
‡4651·28	3		"	"	21493·6
*4645·34‖	3		"	"	21521·0
*4644·48	5		"	"	21525·0
4643·92	4		"	"	21527·6
4640·99	3		"	"	21541·6
‡*4629·47‖	9	4629·515 Rowland	"	6·0	21594·8
4629·05	4		"	"	21596·7
‡4625·88	6		"	"	21611·5
4624·70	3		"	"	21617·0
‡4623·15	5		"	"	21624·3
4622·83	3		"	"	21625·9
4620·96	3		"	"	21634·5
4614·18§	4		1·26	"	21666·3
4612·57	2n		"	"	21673·9
4609·08	3		"	"	21690·3
*4607·46	4		"	"	21697·9
4601·31	4		"	"	21726·9
‡*4597·02	8		"	"	21747·2
‡*4594·75	8		"	"	21758·0
*4588·86	4s		"	"	21785·9
4587·08	3s		"	"	21794·4
‡4581·76§	10	4581·75 Thalén	"	"	21819·7
4580·32	5		1·25	"	21826·5
4575·12	3		"	"	21851·4
4573·75	2		"	"	21857·9
‡4570·18	6		"	"	21875·0
4566·77	5		"	"	21891·3
‡4565·74	9		"	"	21896·2
4564·98	3		"	"	21899·9
4564·35	4s		"	6·1	21902·8
4564·13	3		"	"	21903·9
4562·11	3		"	"	21913·6

‖ See Titanium. § Solar line double {4581·69. 4581·59.

Exner and Haschek give spark lines also at 4671·2, 61·6, 4569·5, 59·3, 56·3.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
4553·51	3		1·25	6·1	21955·0
‡*4549·80¶	8		”	”	21972·9
4547·06	3		”	”	21986·1
*4546·14	5		”	”	21990·6
‡4545·42	4		”	”	21994·1
‡*4543·99	7		”	”	22001·0
4540·96	3		1·24	”	22015·7
‡*4534·18	8		”	”	22048·3
‡*4531·14	10	4531·45 Thalén	”	”	22063·1
‡4528·12	5		”	”	22078·1
‡4526·94	3		”	”	22083·9
*4525·97	3		”	”	22088·6
*4524·88	3		”	”	22093·9
4519·42	4n		”	”	22119·6
*4517·28	7		”	”	22131·1
*4514·33	5		”	”	22145·6
4500·71	2		1·23	”	22212·6
4499·45	2		”	”	22218·8
‡4494·92	5s		”	6·2	22241·1
4492·23	3		”	”	22254·5
4490·46	3		”	”	22263·2
4486·89	4s		”	”	22281·0
4484·65	4s		”	”	22292·1
‡*4484·07	5s		”	”	22294·5
4483·70	5n		”	”	22296·8
‡*4478·45	6		”	”	22322·9
4477·36	3n		”	”	22328·4
‡4471·96	4		”	”	22355·4
‡4471·70	6		”	”	22356·7
‡*4469·72	8		”	”	22366·6
‡*4467·04	7		1·22	”	22380·0
‡4445·88	5		”	”	22486·5
‡4445·21	4		”	”	22489·9
4442·13	2		”	”	22505·5
*4438·05	2		”	”	22526·2
*4436·37	3		”	”	22534·7
‡4431·78	4		”	6·3	22558·0
4421·48	5s		1·21	”	22611·6
‡4417·55	6		”	”	22630·7
*4416·63	3		”	”	22635·4
‡*4402·85	4		”	”	22706·3
*4395·99	4		”	”	22741·7
‡*4392·02	5		1·20	”	22762·3
‡*4391·70	6		”	”	22763·9
‡*4388·02	4		”	”	22783·0
‡*4380·25	6n		”	”	22823·4
*4379·37‖	3		”	”	22828·0
‡4375·70	4		”	”	22847·2
‡*4375·09	5		”	”	22850·4
*4374·66	3		”	”	22852·6
‡*4373·77	6		”	”	22857·3
‡4371·27	6		”	”	22870·3

¶ Solar line double $\left\{\begin{matrix}4549{\cdot}65\\4549{\cdot}80\end{matrix}\right.$, a Titanium line at 4549·79.

‖ Perhaps due to Vanadium.

Also 4552·5, 33·4, 12·4, 12·0, 4443·4, 14·0, 03·8.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
4366·37	3		1·20	6·4	22895·9
4362·11	2		„	„	22918·3
‡4361·20	2		„	„	22923·1
*4360·98	3		„	„	22924·2
*4359·60	3		„	„	22931·5
‡4357·33	2		„	„	22943·4
*4357·05	4		„	„	22944·9
*4353·96	3		1·19	„	22961·2
4340·39	2		„	„	23033·0
‡4339·76	6		„	„	23036·3
4331·38	5		„	„	23080·9
*4320·53	3n		„	„	23138·9
4310·24	2		1·18	„	23194·2
‡*4309·54	4		„	„	23197·9
‡4307·57	4		„	6·5	23208·4
‡*4303·36	5		„	„	23231·2
4298·14	3n		„	„	23259·4
‡*4292·41	4n		„	„	23290·4
‡*4285·93	5s	4285·966 Rowland	„	„	23325·7
*4276·25	4		1·17	„	23378·5
4270·58	3		„	„	23409·5
‡4268·59	4		„	„	23420·4
4268·18	3		„	„	23422·7
‡4263·92	3		„	„	23446·1
*4260·05	3		„	„	23467·4
‡*4252·47	6		„	6·6	23509·1
‡4248·37	3		„	„	23531·8
‡4245·76	3n		„	„	23546·3
4242·06	4		1·16	„	23566·9
*4241·69	4		„	„	23568·9
*4238·63	3		„	„	23585·9
*4237·54	3		„	„	23592·0
‡*4234·18	5		„	„	23610·7
*4230·15	2		„	„	23633·2
‡*4225·28	3		„	„	23660·5
‡*4215·03	2		„	„	23718·0
‡4210·26	2		„	„	23744·9
‡4207·77	3		„	„	23759·0
4198·58	3		1·15	6·7	23811·0
4198·01	2		„	„	23814·2
*4193·01	2		„	„	23842·6
‡*4190·87	6		„	„	23854·7
‡*4187·44	4		„	„	23874·2
‡4171·02	4		„	„	23968·2
‡4162·33	5		1·14	„	24018·3
‡*4158·58	5		„	„	24040·0
‡*4150·59	4		„	„	24086·3
‡4139·58	4		„	6·8	24150·2
‡4122·42	4		1·13	„	24250·8
‡*4121·47	9	4121·480 „	„	„	24256·4
‡*4118·92§	9		„	„	24271·4
‡*4110·69	8		„	„	24320·0

§ Solar line double $\left\{\begin{array}{l}\text{4118·92 Co.}\\\text{4119·02}\end{array}\right.$

Also 4353·0, 42 4, 28·7, 23·0, 07·0, 4290·3, 87·5, 83·6, 81·2, 80·7, 77·7, 69·6, 57·6, 49·3, 44·5, 22·4, 20·5, 14·3, 11·5, 08·7, 02·9, 4195·7, 79·4, 67·0, 66·6, 60·7, 55·0, 45·3, 43·8, 40·6, 32 2, 23·3, 16·0.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
‡4110·21	4		1·13	6·8	24322·9
4109·83	2		,,	,,	24325·1
4104·89	4		,,	,,	24354·4
*4104·57	4s		,,	,,	24356·3
4097·37	4		,,	6·9	24399·0
‡4096·08	4		,,	,,	24406·7
*4093·20	4		1·12	,,	24423·9
*4092·98	4		,,	,,	24425 2
*4092·55§‡‡	8	4092·547 Rowland	,,	,,	24427·7
*4086·47‡‡	7		,,	,,	24464·1
*4085·74	3		,,	,,	24468 5
*4084·28	3		,,	,,	24477·2
‡*4082·76	5		,,	,,	24486·3
4081·63	3		,,	,,	24493·1
‡*4077·55	5		,,	,,	24517·6
4076·74	4		,,	,,	24522·5
4076·28	5s		,,	,,	24525·3
4069·70	3		,,	,,	24564·9
‡*4068·72	6s		,,	,,	24570·8
*4066·52‡‡	6s		,,	,,	24584·1
‡*4058·75	5s	4058·372 ,,	,,	,,	24631·2
‡*4058·36	5s		,,	,,	24633·6
‡4057·36	4s		,,	,,	24639·7
‡4057·10	4		,,	,,	24641·2
‡4054·08	4		1·11	,,	24659·6
‡*4053·08	5		,,	,,	24665·7
‡4049·43	3		,,	7·0	24687·8
‡*4045·53	8		,,	,,	24711·6
*4040·96	4		,,	,,	24739·6
*4040·76	3		,,	,,	24740·8
‡4035·73	7		,,	,,	24771·7
‡*4027·21	6		,,	,,	24824·1
‡*4023·54	3	4023·533 ,,	,,	,,	24846·7
‡*4021·05	7	4021·057 ,,	,,	,,	24862·1
‡*4019·47	4		,,	,,	24871·9
‡*4014·12	4		1·10	,,	24905·1
‡*4011·08	2		,,	,,	24923·9
*3998·04‡‡	8	3997·94 L. & D.	,,	7·1	25005·1
*3995·45§‡‡	9	3995·33 ,,	,,	,,	25021·4
*3994·65	3		,,	,,	25026·4
‡*3991·82	4	3992·04 ,, 91·830 R.	,,	,,	25044·1
3991·69	4	3991·690 Rowland	,,	,,	25044·9
‡3990·45	4	3990·84 L. & D.	,,	,,	25052 7
‡3987·26	4	3987·74 ,, 87·216 R.	,,	,,	25072·8
‡*3979·65	6	3979·34 ,, 79·664 ,,	,,	,,	25120·7
3979·03	3n		,,	,,	25124·6
‡*3978·80	6	3978·809 Rowland	,,	,,	25126·1
‡3977·36	3		,,	,,	25135·2
‡3975·48	3	3975·506 ,,	1·09	,,	25147·1

‡‡ Exner and Haschek's numbers: 4092·52, 4086·50, 4066·50, 3998·03, 3995·50.

§ Solar line double {4092·45. / 4092·56 Co.} {3995·456. / 3995·35.}

Also 4096·7, 95·3, 80·7, 63·3, 62·0, 48·3, 30·2, 29·2, 16·8, 12·4, 08·4, 08·0, 07·4, 06·5, 03·7, 3985·7, 85·3, 83·2, 80·4.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
‡*3974·87	6	3974·74 L. & D.	1·09	7·1	25150·9
‡*3973·29	3		„	„	25161·0
‡3972·66	4		„	„	25164·9
‡3969·25	5	3969·44 „	„	„	25186·6
‡3961·14	4		„	„	25238·2
‡*3958·06	6	3958·34 „	„	„	25257·8
*3957·79	2		„	„	25259·5
‡*3953·05	7	3953·04 „	„	7·2	25289·7
‡3952·47	4		„	„	25293·4
‡*3947·28	3		„	„	25326·7
‡*3945·47	6	3945·53 „	„	„	25338·3
‡*3941·87	6	3941·53 „	„	„	25361·5
‡*3941·01	5	3941·034 Rowland	„	„	25367·0
*3936·12§‡‡	8	3936·13 L. & D.	1·08	„	25398·5
‡*3934·05	4	3934·108 Rowland	„	„	25411·9
‡3933·32	2		„	„	25416·6
‡3929·42	4	3929·363 „	„	„	25441·8
‡3925·32	3	3925·347 „	„	„	25468·4
‡*3922·88	5s		„	„	25484·3
3921·24	3		„	„	25494·9
‡*3920·89§§	4s		„	„	25497·2
‡3920·28	4		„	„	25501·2
3919·79	3		„	„	25504·4
‡3917·26	5	3916·83 L. & D.	„	„	25520·8
‡*3915·66	2		„	„	25531·3
‡*3910·08§	7	3909·63 „ 10·079 R.	„	„	25567·7
‡*3906·42	6	3905·83 „	„	7·3	25591·6
‡*3904·20	4		„	„	25606·1
‡*3898·64§	4		„	„	25642·7
*3895·12‡‡	7	3994·93 „	1·07	„	25665·8
*3894·21‡‡	10nr	3994·03 „	„	„	25671·8
3893·44	3		„	„	25676·9
‡*3893·19	2s		„	„	25678·6
‡3892·26	3		„	„	25684·7
‡3891·83	3		„	„	25687·6
‡*3885·40	4s		„	„	25730·1
‡*3884·76	5	3884·63 „ 84·748 „	„	„	25734·3
*3882·04§‡‡	7	3881·63 „	„	„	25752·4
‡*3881·18	3		„	„	25758·1
‡*3880·54	3		„	„	25762·3
‡*3876·99	6	3876·72 „	„	„	25785·9
*3874·10‡‡	7n	3873·82 „	„	„	25805·1
*3873·25‡‡	9n	3873·02 „	„	„	25810·9
‡*3870·65	4s		„	„	25828·2
*3866·92	2		„	„	25853·1
‡3863·72	3		„	„	25874·5

§§ Solar line triple { 3920·99 Fe. / 3920·89 Co. / 3920·75 Fe. }

‡‡ Exner and Haschek's numbers: 3936·13, 95·08, 94·22, 81·98, 74·05, 73·17.

§ Solar line double { 3936·12 Co. / 3935·95. } { 3882·12 / 3882·04 Co } { 3910·08 Co / 3909·98 Fe } { 3898·65 Co. / 3898·55. }

Also 3966·7, 65·3, 63·9, 63·7, 60·0, 51·8, 50·7, 46·7, 42·7, 40·0, 39·0, 35·4, 34·8, 28·6, 28 4, 28·0, 25·0, 14·5, 14·3, 13·7, 10·6, 08·5, 04·9, 00·3, 3897·8, 97·0, 96·1, 95·8, 90·9, 90·7, 87·1, 86·5, 86·2, 83 4, 81·3, 72·0, 71·4, 69·8, 62·5.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3861·29‡‡	6	3861·12 L. & D.	1·07	7·3	25890·8
*3860·55‖	4		,,	,,	25895·7
‡3856·93	4s		1·06	,,	25920·1
‡*3851·97	4		,,	,,	25953·4
‡3851·09	5s		,,	,,	25959·4
3850·24	3		,,	,,	25965·1
*3845·59‡‡	9n	3845·42 ,, 45·606 R.	,,	,,	25996·5
‡*3843·90	4	3843·854 Rowland	,,	,,	26007·9
*3842·20‡‡	7n	3842·02 L. & D.	,,	,,	26019·5
‡*3841·60	4s		,,	,,	26023·5
‡3836·04	3		,,	,,	26061·2
‡3835·82	3		,,	,,	26062·7
‡*3833·02	3		,,	,,	26081·8
‡3820·02	4		,,	7·4	26170·6
‡3818·08	3		,,	,,	26183·9
‡3817·02	4		,,	,,	26191·2
*3816·58‡‡	5	3816·31 ,,	1·05	,,	26194·2
*3816·46‡‡	5	3815·72 ,,	,,	,,	26195·0
‡3814·58	4	3814·617 Rowland	,,	,,	26207·9
‡*3812·57	3		,,	,,	26221·7
‡*3811·16	3		,,	,,	26231·4
‡*3808·24	4	3807·91 L. & D.	,,	,,	26250·5
‡*3805·90	3		,,	,,	26267·7
‡3777·65	4	3777·60 ,,	,,	,,	26464·2
‡3774·72	4	3774·60 ,,	1·04	,,	26484·7
‡3760·52	3		,,	7·5	26584·7
‡3759·83	3		,,	,,	26589·4
‡*3755·59	5s		,,	,,	26619·5
‡3754·50	3	3754·50 ,,	,,	,,	26627·2
‡3752·95	2		,,	,,	26637·9
‡*3751·75	4		,,	,,	26646·7
‡*3750·06	5		,,	,,	26658·7
3745·61‡‡	7	3746·40 ,,	,,	,,	26689·4
3740·31	4		,,	,,	26728·3
‡*3736·30	5	3735·80 ,,	1·03	,,	26756·9
‡*3734·30	5s		,,	,,	26771·3
*3733·62‡‡	5	3733·40 ,,	,,	,,	26776·2
*3732·52¶‡‡	6	3732·545 Rowland	,,	,,	26784·1
‡*3731·42	2		,,	,,	26792·0
‡‡*3730·61§§	5	3730·40 L. & D.	,,	,,	26797·8
‡*3726·80	3		,,	7·6	26825·1
‡*3712·31	4	3712·20 ,,	,,	,,	26929·8
‡*3711·80	3		,,	,,	26933·5
*3708·96‡‡	5		,,	,,	26954·1
‡*3707·61§	4		,,	,,	26964·0
*3704·17‡‡	6	3704·10 ,,	,,	,,	26989·0
‡*3702·40‡‡	5	3702·30 ,,	,,	,,	27001·9

‖ Also Manganese.

‡‡ Exner and Haschek's numbers: 3861·28, 45·57, 42·12, 16·58, 16·43, 3745·61, 33·61, 32·58, 30·62, 08·98, 04·21, 02·39. ¶ Also Iron.

§ Solar line double { 3707·70 Ti. / 3707·60 Co. } §§ Solar line triple { 3730·60 Co. / 3730·50 / 3730·43 } Fe.

Also 3855·0, 52·8, 44·4, 37·6, 32·5, 27·2, 25·4, 24·5, 23·7, 21·3, 19·2, 14·1, 13·4, 10·0, 03·9, 02·9, 02·0, 01·4, 00·4, 3798·1, 96·0, 92·7, 92·0, 89·5, 88·9, 87·6, 85·5, 83·8, 82·4, 81·0, 80·0, 79·2, 78·5, 77·2, 72 2, 69·2, 65·5, 63·6, 49·6, 48·3, 43·0, 42·5, 39·5, 29·0, 17·5, 07·3, 06·8, 06·5, 05 7, 04·9.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*3693·65‡‡	5s	3693·39 L. & D.	1·02	7·6	27065·9
*3693·53‡‡	3		„	„	27066·8
‡3693·27	5	3692·99 „	„	„	27068·7
‡*3690·87	4s	3690·79 „	„	„	27086·3
‡3686·63	3		„	„	27117·4
‡3685·13	3		„	„	27128·5
‡*3684·62	5		„	„	27132·2
*3683·18¶‡‡	7	3683·09 „ 83·182 R.	„	7·7	27142·8
*3676·69‡‡	6		„	„	27190·7
‡*3670·20	3		„	„	27238·8
‡3662·33‡‡		3662·38 „	„	„	27297·3
‡*3658·05¶	3		„	„	27329·3
‡*3657·12	4s	3656·68 „	1·01	„	27336·2
‡*3654·59	4s	3654·58 „	„	„	27355·2
*3652·68‡‡	5	3652·692 Rowland	„	„	27369·5
‡3651·42	4s		„	„	27378·9
‡*3649·47¶	6	3649·38 L. & D.	„	„	27393·5
‡3648·30	4		„	„	27402·3
‡3647·82	5		„	„	27405·9
‡*3647·25	4		„	„	27410·2
‡3645·60	3		„	„	27422·6
‡3645·36	4		„	„	27424·4
‡3643·34	5	3643·28 „	„	„	27439·6
‡*3641·95	5	3641·68 „	„	„	27450·1
*3639·63§‡‡	5	3639·48 „	„	„	27467·6
‡3637·49	4s		„	7·8	27483·7
‡*3636·89	4s	3636·68 „	„	„	27488·2
*3634·86‡‡	5	3634·78 „	„	„	27503·6
‡3633·52	3s		„	„	27513·7
*3633·00‡‡	5	3632·78 „	„	„	27517·7
‡3632·12	4		„	„	27524·3
3631·55‡‡	6		„	„	27528·7
*3627·96‡‡	7	3627·88 „	„	„	27555·9
‡*3625·13	5		„	„	27577·4
*3624·48	4		„	„	27582·4
‡*3620·59	4		„	„	27612·0
‡3618·17	3		„	„	27630·5
‡*3615·56	4	3615·38 „	1·00	„	27650 4
*3611·89‡‡	5	3611·88 „	„	„	27678·5
‡*3609·92	3		„	„	27693·6
3608·50	3		„	„	27704·6
*3605·50§‡‡	6	3605·58 „	„	„	27727·6
‡*3605·19	4		„	„	27730·0
‡*3604·62	4		„	„	27734·4
3600·99	3		„	„	27763·1
‡*3596·67	4		„	„	27795·7
*3595·00‡‡	7r	3594·98 „	„	7·9	27808·5
‡*3591·92	3		„	„	27832·5
‡3589·44	2		„	„	27851·6

§ Solar line double $\begin{cases}\text{3605·62 Fe} \\ \text{3605·50 Co}\end{cases}$ $\begin{cases}\text{3586·30 Fe.} \\ \text{3586·20 Co.}\end{cases}$ ¶ Also Iron.

‡‡ Exner and Haschek's numbers: 3693·61, 93·25, 83·19, 76·70, 62·30, 39·60, 52·70, 34·90, 33·00, 31·60, 27·98, 11·88, 05·53, 3595·00.

Also 3701·6, 3695·4, 94·6, 85·8, 81·5, 80·6, 64·3, 61·0, 56·3, 55·2, 38·4, 30·4, 30·0, 26·3, 21·33, 19·55, 13·7, 09·4, 07·8, 06·1, 02·7, 02·22, 3589·8.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
*3587·30‡‡	10nr	3587·28 L. & D.	1·00	7·9	27868·2
*3586·20§	3		,,	,,	27876·8
‡3585·92	3		,,	,,	27878·9
*3585·28‡‡	7r		,,	,,	27883·9
‡*3584·92	5s		,,	,,	27886·7
‡3582·00	4		,,	,,	27909·5
‡3579·16	4		,,	,,	27931·6
3579·01	4		,,	,,	27932·8
‡*3578·20	4	3577·98 ,,	,,	,,	27939·1
3577·80	3		0·99	,,	27942·2
*3577·36	3		,,	,,	27945·7
*3575·48‡‡	7nr	3575·47 ,,	,,	,,	27960·4
*3575·06‡‡	6nr	3575·07 ,,	,,	,,	27963·7
*3569·48‡‡	10nr	3569·47 ,,	,,	,,	28007·4
*3568·36	3		,,	,,	28016·2
*3565·08‡‡	6r	3565·07 ,,	,,	,,	28042·0
‡*3564·25	4		,,	,,	28048·5
‡*3563·04	5s		,,	,,	28058·0
‡*3562·22	5s		,,	,,	28064·5
*3561·01‡‡	6r	3561·07 ,,	,,	,,	28074·0
‡3560·44	4		,,	,,	28078·5
‡*3558·90	5s		,,	,,	28090·7
*3553·28	3		,,	,,	28135·1
‡*3553·12 } ‖	5		,,	,,	28136·4
‡*3552·85 }	4	3552·97 ,,	,,	,,	28138·5
*3550·72‡‡	6r	3550·67 ,,	,,	8·0	28155·3
‡*3548·60	5	3548·57 ,,	,,	,,	28172·1
‡*3546·86	4		,,	,,	28186·0
*3543·40‡‡	6s	3543·37 ,,	,,	,,	28213·5
‡3534·92	4		0·98	,,	28281·2
*3533·49‡‡	7r	3533·37 ,,	,,	,,	28292·6
*3529·92‡‡	9nr	3529·87 ,,	,,	,,	28321·3
*3529·17‡‡	6	3528·96 ,,	,,	,,	28327·3
*3526·96‡‡	9nr	3526·86 ,,	,,	,,	28345·0
*3525·97	3		,,	,,	28353·0
*3523·85	5		,,	,,	28370·0
*3523·57‡‡§	6r	3523·46 ,,	,,	,,	28372·3
‡*3523·00	4		,,	,,	28376·9
*3521·70‡‡	6r	3521·46 ,,	,,	,,	28387·4
*3520·20‡‡	6	3520·06 ,,	,,	,,	28399·5
*3519·90	4		,,	,,	28401·9
*3518·49‡‡	7	3518·26 ,, 18·487 R.	,,	,,	28413·3
*3513·62‡‡	7		,,	,,	28452·7
*3512·78‡‡	7	3512·56 ,,	,,	,,	28459·5

§ Solar line double { 3605·62 Fe / 3605·50 Co } { 3586·30 Fe / 3586·20 Co } { 3523·57 Co. / 3523·47 }

‡‡ Exner and Haschek's numbers: 3587·36, 85·33, 75·52, 75·06, 69·58, 65·08, 61·00, 50·72, 43·42, 33·46, 29·20, 26·96, 27·00, 23·60, 21·70, 20·23, 18·53, 13·58, 12·80.

‖ Solar line triple { 3553·12 Co. / 3552·98 Fe. / 3552·85 Co. }

Also 3584·0, 82·7, 80·3, 73·1, 71·9, 69·0, 67·9, 67·5, 63·7, 62·5, 61·2, 57·6, 57·2, 53·8, 51·6, 50·0, 47·6, 45·1, 42·6, 39·7, 37·8, 36·1, 31·7, 30·6, 28·2, 22·6, 16·0, 14·4, 14·3.—E. and H.

COBALT—*continued.*

Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*3510·53‡‡§	7	3510·26 L. & D.	0·98	8·1	28477·6
*3509·98‡‡§	7	3509·86 „	„	„	28482·1
*3506·44‡‡	8 nr	3506·16 „	„	„	28510·8
‡3505·28	3		„	„	28520·3
‡3504·88	4		„	„	28523·5
*3503·86	3	3503·96 „	„	„	28531·9
*3502·76‡‡	6nr	3502·56 „	„	„	28540·9
*3502·41‡‡	9nr	3502·16 „	„	„	28543·7
*3496·83§‡‡	6r	3496·56 „ 96·225 R.	0·97	„	28589·2
*3495·82‡‡	7	3495·66 „	„	„	28597·1
‡*3492·15	3		„	„	28627·6
‡*3491·46	5	3491·16 „	„	„	28633·2
‡3490·89	5		„	„	28638·0
*3489·54‡‡	8r	3489·36 „	„	„	28649·0
‡*3487·86	4		„	„	28662·8
*3485·49‡‡	7	3485·25 „	„	„	28682·3
*3483·55‡‡	6r	3483·25 „	„	„	28698·2
‡3480·16	3		„	„	28726·2
*3478·90	4	3478·55 „	„	„	28736·6
‡*3478·69	4		„	„	28738·5
‡*3478·01	3	3478·001 Rowland	„	„	28744·0
‡*3476·49	4	3476·55 L. & D.	„	„	28756·5
‡*3474·66§	4		„	„	28771·7
*3474·15‡‡	8n	3473·95 „	„	„	28775·9
‡*3471·52§	5		„	„	28797·7

SPARK SPECTRUM.

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3469·2	2		0·97	8·2	28817
3468·7	2		„	„	28821
3468·3	2		„	„	28825
3467·7	2		„	„	28830
3467·5	2		„	„	28831
3465·93	8	3465·8 L. & D. 66·010 R.	„	„	28844·1
3465·5	2		„	„	28848
3462·93	8	62·8 „	„	„	28869·1
3461·3	4	61·2 „	„	„	28883
3460·5	2		„	„	28890
3458·5	2		0·96	„	28906
3457·8	2		„	„	28912

* Double.

‡‡ Exner and Haschek's numbers: 3510·55, 3509·98, 3506·45, 3502·75, 3502·30, 3496·87, 3495·78, 3489·58, 3485·50, 3483·55, 3474·11.

§ Solar line double { 3471·52 Co. / 3471·47 Fe.

Also 3504·3, 01·8, 01·0, 3499·3, 97·5, 96·0, 87·1, 85·6, 83·9, 83·1, 82·3, 81·2, 77·5, 76·6, 75·6, 72·7.—E. and H.

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
3457·1	4		0·96	8·2	28918
3456·6	2		„	„	28922
3456·2	2		„	„	28926
3455·6	2n		„	„	28931·1
3455·38	5	3455·2 L. & D. 55·384 R.	„	„	28932·7
3453·65	8	3453·5 „	„	„	28946·2
3453·0	4		„	„	28952
3452·6	2		„	„	28956
3452·1	2		„	„	28960
3451·8	2		„	„	28962
*3451·3	2		„	„	28967
3449·62	7	3449·5 „	„	„	28980·5
3449·32	7	3449·2 „	„	„	28983·0
3447·5	2		„	„	28999
3447·3	2		„	„	29000
3446·50	6	3446·3 „	„	„	29006·7
3445·6	2n		„	„	29014
3443·82	7	3443·6 „ 3443·791 R.	„	„	29029·3
3443·4	2		„	„	29033
3443·02	5	3442·9 L. & D.	„	„	29036·1
3442·2	2		„	„	29043
3441·4	2		„	„	29050
3441·3	2		„	„	29051
3440·8	2		„	„	29055
3439·0	4		„	„	29070
3438·0	2		„	„	29079
3437·2	2	3437·3 „	„	„	29085
3435·9	2		„	„	29096
3435·6	2		„	„	29099
3433·18	7	3433·4 „	„	8·3	29120·1
3432·5	2	3432·9 „	„	„	29125
3431·73	7	3431·8 „	„	„	29131·5
3431·1	2	3431·4 „	„	„	29137
3430·9	2		„	„	29139
3430·0	2		„	„	29147
3429·5	2		„	„	29151
3429·0	2		„	„	29155
3428·5	4		„	„	29159
3426·6	2		„	„	29175
3424·7	4		„	„	29192
*3424·0	4	3423·7 „	„	„	29198
3423·0	2		„	„	29206
3421·9	2		„	„	29216
3421·0	2		„	„	29223
3417·9	4		0·95	„	29250
3417·32	7	3417·0 „	„	„	29254·4
3415·90	5	3415·7 „	„	„	29266·7
3414·90	6		„	„	29275·2
3413·7	2		„	„	29286
3412·80	7	3412·5 „	„	„	29293·2
3412·48	7	3412·2 „	„	„	29295·9
3411·7	2		„	„	29304
3409·32	7	3409·1 „	„	„	29323·0
3407·1	2	3406·6 „	„	„	29343
3405·28	8	3405·0 „ 3405·272 R.	„	„	29357·9

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3403·7	2		0·95	8·3	29372
3403·3	2		,,	,,	29375
3402·3	2		,,	,,	29384
3402·2	2		,,	,,	29385
3402·0	2n		,,	,,	29386
3399·3	2n		,,	,,	29410
3399·0	2		,,	,,	29416
3395·50	7	3395·3 L. & D.	,,	8·4	29442·3
3393·1	4	3394·7 ,,	,,	,,	29464
3391·2	4		,,	,,	29480
3390·6	2		,,	,,	29485
3388·30	7	3388·1 ,,	,,	,,	29504·8
3387·80	5	3387·6 ,,	,,	,,	29509·3
3385·35	5	3385·2 ,,	,,	,,	29530·6
3384·1	2		,,	,,	29542
3382·3	2		,,	,,	29558
3381·7	2		,,	,,	29563
3381·2	2		,,	,,	29567
3378·9	4	3380·5 ,,	,,	,,	29587
3378·5	2	3378·5 ,,	0·94	,,	29591
3377·2	4	3377·1 ,,	,,	,,	29602
3376·4	2		,,	,,	29609
3375·2	2n		,,	,,	29620
3374·8	2		,,	,,	29623
3374·4	4		,,	,,	29627
3374·2	2		,,	,,	29629
3373·4	4		,,	,,	29636
3372·2	2		,,	,,	29646
3371·08	5	3370·9 ,,	,,	,,	29655·7
3370·5	4		,,	,,	29661
3369·7	4		,,	,,	29668
3368·8	2		,,	,,	29676
3367·27	5	3367·1 ,,	,,	,,	29689·2
3366·4	2		,,	,,	29697
3366·0	2		,,	,,	29701
3365·3	2n		,,	,,	29707
3364·5	2		,,	,,	29709
3363·9	2		,,	,,	29719
3363·4	2		,,	,,	29724
3363·0	4	3362·8 ,,	,,	,,	29727
3361·7	4	3361·3 ,,	,,	,,	29739
3361·5	2b		,,	8·5	29741
3360·5	2b		,,	,,	29749
3359·4	4		,,	,,	29759
3358·8	4		,,	,,	29765
3358·3	2n		,,	,,	29769
3357·0	2		,,	,,	29780
3356·6	2		,,	,,	29784
3356·1	2		,,	,,	29788
3355·3	2		,,	,,	29796
3354·48	7	3354·4 ,,	,,	,,	29802·4
3352·9	4	3352·8 ,,	,,	,,	29817
3351·7	2		,,	,,	29828
3351·3	2n		,,	,,	29831
3350·5	2	3349·4 ,,	,,	,,	29838

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3348·3	4	3348·2 L. & D.	0·94	8·5	29858
3347·1	4	3346·9 ,,	,,	,,	29869
3346·4	2		,,	,,	29875
3344·2	2		,,	,,	29895
3342·9	4	3342·7 ,,	,,	,,	29906
3342·1	2		,,	,,	29913
3341·5	4	3341·3, 3340 7 L. & D.	,,	,,	29918
3340·0	4	3339·8 L. & D.	,,	,,	29932
3337·3	2		0·93	,,	29956
3336·6	2		,,	,,	29963
3334·30	5	3334·1 ,,	,,	,,	29982·8
3333·5	4		,,	,,	29990
3329·6	4	3329·5 ,,	,,	,,	30025
3328·4	2		,,	,,	30036
3327·1	4	3326·9 ,,	,,	,,	30048
3325·4	4	3325·3 ,,	,,	8·6	30066
3324·0	2		,,	,,	30076
3323·0	2		,,	,,	30085
3322·33	5	3322·2 ,,	,,	,,	30090·8
3320·5	2		,,	,,	30107
3320·0	2		,,	,,	30111
3319·6	4	3319·5 ,,	,,	,,	30115
3319·4	2		,,	,,	30117
3318·6	2		,,	,,	30124
3315·2	2		,,	,,	30155
3314·23	5	3314·1 ,,	,,	,,	30164·3
3313·3	2		,,	,,	30172
3313·1	2		,,	,,	30174
3312·3	4	3312·2 ,,	,,	,,	30181
3308·9	2	3309·6 ,, 3308·947 R.	,,	,,	30213
3308·6	2	3308·7 ,,	,,	,,	30215
3307·3	4	3307·0 ,,	,,	,,	30227
3306·5	2		,,	,,	30234
3305·8	2		,,	,,	30241
3305·2	2		,,	,,	30246
3304·9	2		,,	,,	30249
3304·2	2		,,	,,	30255
3304·0	2		,,	,,	30257
3303·4	2n	3303·7 ,,	,,	,,	30263
3301·9	2n		,,	,,	30277
3301·3	2n		0·92	,,	30282
3298·8	4		,,	,,	30305
3297·6	2b		,,	,,	30316
3296·6	2b		,,	,,	30325
3294·7	2	3294·7 ,,	,,	,,	30343
3294·1	2		,,	,,	30348
3293·5	2		,,	,,	30354
3292·2	2	3292·174 Rowland	,,	,,	30366
3290 6	2b		,,	,,	30381
3287·7	2		,,	8·7	30407
3287·4	4	3287·1 L. & D.	,,	,,	30410
3286·0	2n		,,	,,	30423
3283·9	2	3284 7 ,,	,,	,,	30451
3283·57	7	3283·4 ,,	,,	,,	30446·0
3282·3	2b		,,	,,	30457

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3281·5	2n		0·92	8·7	30465
3279·4	4		,,	,,	30484
3279·0	2	3279·0 L. & D.	,,	,,	30488
3278·3	2		,,	,,	30495
3277·8	4	3277·7 ,,	,,	,,	30499
3277·5	4		,,	,,	30502
3276·6	4n	3276·5 ,,	,,	,,	30510
3274·10	7		,,	,,	30534·0
3271·92	5	3271·8 ,,	,,	,,	30554·0
3271·4	2		,,	,,	30559
3270·5	2		,,	,,	30567
3269·7	2		,,	,,	30575
3269·3	2		,,	,,	30579
3268·2	2n		,,	,,	30589
3267·9	2n		,,	,,	30592
3265·5	2		,,	,,	30514
3265·0	4	3264·9 ,,	,,	,,	30619
3262·5	4	3262·2 ,,	,,	,,	30642
3261·8	2n		,,	,,	30649
3261·2	2n		,,	,,	30655
3260·97	6	3260·6 ,,	,,	,,	30657·0
3260·0	2n		0·91	,,	30666
3258·5	2		,,	,,	30680
3258·2	4		,,	,,	30683
3256·5	2		,,	,,	30699
3254·35	6	3254·2 ,,	,,	,,	30719·4
3250·1	4	3250·1 ,,	,,	8·8	30759
3247·70	7		,,	,,	30782·2
3247·30	7	3247·2 ,,	,,	,,	30785·4
3247·2	2		,,	,,	30787
3246·3	2		,,	,,	30795
3246·0	2		,,	,,	30798
3245·7	2		,,	,,	30801
3245·5	2		,,	,,	30803
3244·02	5	3243·9 ,,	,,	,,	30817·1
3243·8	2		,,	,,	30819
3239·1	2n		,,	,,	30864
3238·5	2n		,,	,,	30869
3238·0	2n		,,	,,	30874
3237·2	4	3237·2 ,, 3237·441R.	,,	,,	30882
3235·7	4	3235·7 ,,	,,	,,	30896
3234·7	2		,,	,,	30906
3234·3	2	3232·9 ,,	,,	,,	30910
3231·0	2		,,	,,	30941
3228·8	2		,,	,,	30962
3228·2	2		,,	,,	30968
3227·1	4	3227·0 ,,	,,	,,	30979
3226·3	2n		,,	,,	30986
3225·3	4		,,	,,	30996
3224·8	4		,,	,,	31001
3221·8	2		,,	,,	31030
3221·4	2n		,,	,,	31033
3219·2	4	3219·2 ,,	0·90	,,	31055
3218·0	2		,,	,,	31066
3217·2	2		,,	,,	31074

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3217·0	2		0·90	8·8	31076
3215·4	2		”	8·9	31091
3214·2	2		”	”	31103
3213·5	2		”	”	31110
3212·1	2		”	”	31123
3210·9	4	3210·6 L. & D.	”	”	31135
3210·3	4		”	”	31141
3206·2	2		”	”	31181
*3204·1	2		”	”	31201
3203·2	2		”	”	31210
3202·3	2		”	”	31219
3200·5	2		”	”	31236
3199·4	2		”	”	31247
3198·7	2		”	”	31254
3198·5	2b		”	”	31256
3197 2	2		”	”	31268
3197·0	2		”	”	31270
3196·6	2		”	”	31274
3196·2	2		”	”	31278
3194·1	2b		”	”	31299
3193·2	2		”	”	31308
3192·3	2		”	”	31316
3191·3	2		”	”	31326
3189·8	2		”	”	31341
3188·5	5	3188·5 ”	”	”	31354
3186·4	4		”	”	31374
3186·0	4		”	”	31378
3184·4	2		”	”	31394
3182·2	4	3182·2 ”	0·89	”	31416
3180·4	2		”	9·0	31434
3180·1	2		”	”	31437
3179·6	2		”	”	31441
3177·42	5	3177·1 ”	”	”	31463·1
3175·0	4	3175 3 ”	”	”	31487
3174·2	4		”	”	31495
3173·2	2		”	”	31505
3172·1	2n		”	”	31516
3171·4	2b		”	”	31523
3169·91	5	3170·0 ”	”	”	31537·6
3168·1	4		”	”	31556
3164·6	2	3164·8 ”	”	”	31591
3163·7	2		”	”	31600
3161·7	4	3161·8 ”	”	”	31620
3161·2	2		”	”	31625
3159·8	4	3159·7 ”	”	”	31639
3158·90	5	3158·7 ”	”	”	31647·6
3156·7	2n		”	”	31670
3155·8	2		”	”	31679
*3154·82	7	3154·7 ”	”	”	31688·6
3152·8	4	3152·8 ”	”	”	31709
3150·8	2n		”	”	31729
3149·4	4	3149·4 ”	”	”	31743
3147·20	5	3147·1 ”	”	9·1	31765·2
3144·1	2		”	”	31797
3140·7	2		0·88	”	31831

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)		Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3140·09	5	3140·0 L. & D.		0·88	9·1	31837·1
3137·9	2			,,	,,	31859
3137·53	5	3137·3	,, 3137·441 R.	,,	,,	31863·1
3136·9	2			,,	,,	31870
3132·3	2			,,	,,	31916
3130·9	4	3130·9	,,	,,	,,	31931
3129·6	2			,,	,,	31944
3129·1	2			,,	,,	31949
3127·4	2	3127·2	,,	,,	,,	31966
3126·9	2			,,	,,	31972
3126·7	2			,,	,,	31974
3123·0	2b			,,	,,	32011
3121·68	5	3121·6	,,	,,	,,	32024·9
3121·56	5			,,	,,	32026·2
3118·4	4			,,	,,	32059
3116·8	2n			,,	,,	32075
3115·8	2n			,,	,,	32085
3115·2	2n			,,	,,	32092
3114·5	2			,,	9·2	32099
3114·3	4			,,	,,	32101
3113·6	4	3113·5	,,	,,	,,	32108
3112·3	2			,,	,,	32122
3111·4	2			,,	,,	32131
3110·9	2			,,	,,	32136
3110·7	2n			,,	,,	32138
3110·2	4	3110·0	,,	,,	,,	32143
3109·6	4	3109·5	,,	,,	,,	32149
3109·3	2			,,	,,	32153
3107·6	2			,,	,,	32170
3107·2	2			,,	,,	32174
3105·9	2			,,	,,	32188
3105·5	2			,,	,,	32192
3104·1	2			,,	,,	32206
3103·8	4	3103·8	,,	,,	,,	32210
3102·5	4	3102·3	,,	,,	,,	32223
3100·9	2			0·87	,,	32240
3100·6	2			,,	,,	32243
3100·2	2			,,	,,	32247
3099·2	2			,,	,,	32257
3098·3	4	3098·1	,,	,,	,,	32267
3097·3	2			,,	,,	32277
3096·9	2			,,	,,	32281
3096·5	2			,,	,,	32286
3095·8	2			,,	,,	32293
3093·3	2n			,,	,,	32319
3090·4	4			,,	,,	32349
3089·7	4	3089·5	,,	,,	,,	32361
3088·7	2			,,	,,	32367
3088·0	2			,,	,,	32374
3086·90	6	3086·8	,,	,,	,,	32385·8
3086·6	4			,,	,,	32389
3082·9	2n			,,	9·3	32428
3082·72	6	3082·6	,,	,,	,,	32429·6
3081·0	4			,,	,,	32448
3079·5	4	3079·4	,,	,,	,,	32464

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3078·7	2n		0·87	9·3	32472
3077·8	2n		,,	,,	32482
3077·3	2n		,,	,,	32487
3076·3	2		,,	,,	32498
3073·6	4	3073·9 L. & D.	,,	,,	32526
3072·45	6	3072·5 ,,	,,	,,	32538·0
3072·1	4	3072·3 ,,	,,	,,	32542
3071·0	2		,,	,,	32554
3068·7	2		,,	,,	32578
3066·5	2		,,	,,	32601
3064·7	4		,,	,,	32621
3064·5	4	3064·5 ,,	,,	,,	32623
3063·6	2	3063·5 ,,	,,	,,	32632
3062·3	2n		0·86	,,	32646
3061·93	6	3061·9 ,, 3061·932R.	,,	,,	32649·8
3061·0	2		,,	,,	32660
3060·1	4	3060·1 ,,	,,	,,	32670
3058·6	2		,,	,,	32686
3056·8	2		,,	,,	32705
3055·2	2		,,	,,	32722
3054·8	2		,,	,,	32726
3053·0	2		,,	9·4	32746
3050·6	2		,,	,,	32771
3050·2	2		,,	,,	32776
3048·95	5	3048·6 ,,	,,	,,	32788·8
3048·3	2		,,	,,	32796
3046·3	2		,,	,,	32817
3044·10	7	3044·1 ,,	,,	,,	32841·0
3042·6	4	3042·7 ,,	,,	,,	32858
3041·9	2		,,	,,	32865
3041·7	2		,,	,,	32867
3041·0	2		,,	,,	32875
3039·7	2		,,	,,	32889
3036·8	2		,,	,,	32920
3035·5	2		,,	,,	32935
3034·80	5	3034·5 ,,	,,	,,	32941·7
3034·5	4	3034·3 ,,	,,	,,	32945
3034·2	2		,,	,,	32949
3032·6	2n		,,	,,	32966
3032·0	2		,,	,,	32973
3031·4	2		,,	,,	32979
3031·2	2n		,,	,,	32981
3028·4	2n		,,	,,	33012
3026·7	2n		,,	,,	33030
3026·48	5		,,	,,	33032·3
3024·5	2		,,	9·5	33053
3023·7	2		0·85	,,	33062
3022·8	2b		,,	,,	33072
3022·5	2		,,	,,	33075
3020·1	2		,,	,,	33101
3019·9	2		,,	,,	33104
3019·3	2		,,	,,	33111
3017·70	6	3017·5 ,,	,,	,,	33128·3
3017·5	2		,,	,,	33130
3015·8	2	3015·7 ,,	,,	,,	33149

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3013·72	5	3013·7 L. & D.	0·85	9·5	33172·1
3011·7	2		,,	,,	33194
3011·2	2n		,,	,,	33199
3010·1	2	3010·8 ,,	,,	,,	33211
3008·9	4	3009·0 ,,	,,	,,	33225
3008·3	2		,,	,,	33231
3006·1	2		,,	,,	33256
3005·8	2		,,	,,	33259
3005·0	2b		,,	,,	33268
3001·7	2b		,,	,,	33304
3000·7	4	3000·6 ,,	,,	,,	33316
2999·8	2		,,	,,	33326
2996·7	2		,,	9·6	33360
2995·2	4	2995·2 ,,	,,	,,	33377
2990·4	2		,,	,,	33430
2989·68	6	2989·6 ,,	,,	,,	33438·8
2988·2	2		,,	,,	33455
2987·28	6	2987·0 ,,	,,	,,	33465·7
2982·3	2	2983·8 ,,	0·84	,,	33521
*2981·7	4		,,	,,	33528
2978·1	2		,,	,,	33568
2975·6	2		,,	,,	33597
2973·3	4		,,	,,	33623
2971·7	2b	2971·5 ,,	,,	9·7	33641
2971·1	2n		,,	,,	33648
2968·7	2		,,	,,	33675
2968·3	2n		,,	,,	33679
2965·3	2n		,,	,,	33713
2964·8	2n		,,	,,	33719
2963·0	2n		,,	,,	33740
*2961·7	2n		,,	,,	33754
2961·3	2		,,	,,	33759
2961·0	2		,,	,,	33762
2959·7	2		,,	,,	33777
2957·8	2		,,	,,	33799
2955·5	2		,,	,,	33825
2954·83	8	2954·6 ,,	,,	,,	33833·2
2954·0	2		,,	,,	33842
2944·0	2		,,	9·8	33957
2943·2	6n	2943·0 ,,	,,	,,	33967
2942·5	2		0·83	,,	33975
2942·2	2		,,	,,	33978
2934·1	2		,,	,,	34072
2933·7	2		,,	,,	34077
2930·62	5n	2930·5 ,,	,,	,,	34112·7
2929·7	4	2929·5 ,,	,,	,,	34123
2929·0	2		,,	,,	34131
2928·1	2		,,	,,	34142
2927·8	4	2927·7 ,,	,,	,,	34145
2927·0	2		,,	,,	34155
2925·6	2n		,,	,,	34171
2924·8	2n		,,	,,	34180
2924·2	2n		,,	,,	34187
2921·7	2b		,,	,,	34217
2919·7	2		,,	9·9	34240

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
2918·70	5n	2918·6 L. & D.	0·83	9·9	34251·9
2916·7	2n		,,	,,	34275
2916·2	2n		,,	,,	34281
2915·5	2n		,,	,,	34289
2914·7	2		,,	,,	34299
2913·7	2		,,	,,	34311
2912·1	2n		,,	,,	34329
2911·6	2n		,,	,,	34335
2910·1	2n		,,	,,	34353
2908·9	2n		,,	,,	34367
2907·7	2n		,,	,,	34381
2907·0	2	2907·0 ,,	,,	,,	34390
2905·6	2n		,,	,,	34406
2905·2	2n		,,	,,	34411
2904·3	2		,,	,,	34422
2903·8	2n		0·82	,,	34428
2903·2	2		,,	,,	34435
2899·9	2	2899·8 ,,	,,	,,	34474
2898·8	2		,,	,,	34487
2897·9	2n	2898·0 ,,	,,	,,	34498
2895·9	2		,,	10·0	34522
2895·5	2		,,	,,	34526
2895·3	2		,,	,,	34529
2894·9	2		,,	,,	34534
2892·4	2n		,,	,,	34563
2890·52	6	2890·5 ,,	,,	,,	34585·8
2889·7	4		,,	,,	34596
2888·6	2n		,,	,,	34609
2886·5	4	2886·5 ,,	,,	,,	34634
2883·8	2		,,	,,	34666
2883·5	2	2883·6 ,,	,,	,,	34670
2882·3	2		,,	,,	34684
2882·0	2	2881·8 ,,	,,	,,	34688
2880·5	2b	2880·4 ,,	,,	,,	34706
2879·7	2n		,,	,,	34716
2878·6	2		,,	,,	34729
2876·9	2		,,	,,	34750
2876·6	2		,,	,,	34753
2874·2	2		,,	,,	34783
2874·1	2		,,	,,	34785
2873·5	2		,,	,,	34791
2873·0	2		,,	,,	34797
2872·6	2		,,	10·1	34802
2871·28	7	2870·9 ,,	,,	,,	34817·6
2870·2	4n		,,	,,	34831
2868·3	2n		,,	,,	34854
2867·5	2n		,,	,,	34864
2866·7	2n		,,	,,	34873
2865·6	2n	2865·6 ,,	,,	,,	34887
2862·7	2	2862·7 ,,	0·81	,,	34922
2861·5	2n		,,	,,	34937
2859·7	2		,,	,,	34959
2858 5	2		,,	,,	34973
2857·3	2b		,,	,,	34988
2856·2	2		,,	,,	35002

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)		Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2855·8	2			0·81	10·1	35006
2853·5	2b			,,	,,	35035
2852·2	2			,,	,,	35051
2851·0	2			,,	,,	35065
2850·1	2	2850·3	L. & D.	,,	,,	35076
2849·7	2			,,	,,	35081
2848·4	2b	2848·4	,,	,,	10·2	35097
2845·8	4	2845·7	,,	,,	,,	35129
2844·2	2			,,	,,	35149
2840·8	2			,,	,,	35191
2838·0	2b			,,	,,	35226
2837·3	4	2837·2	,,	,,	,,	35235
2835·8	2			,,	,,	35253
2835·1	4	2834·8	,,	,,	,,	35262
2834·5	2			,,	,,	35270
2834·0	2			,,	,,	35276
2831·7	2			,,	,,	35304
2828·7	2n			,,	,,	35342
2827·4	2			,,	,,	35358
2827·0	2			,,	,,	35363
2825·32	6	2825·0	,,	,,	,,	35384·0
2823·7	2	2823·7	,,	0·80	10·3	35405
2823·3	2b	2823·2	,,	,,	,,	35410
2821·9	2n	2821·6	,,	,,	,,	35427
2820·1	2	2819·9	,,	,,	,,	35450
2819·5	2			,,	,,	35457
2819·0	4			,,	,,	35464
2818·8	2	2818·8	,,	,,	,,	35466
2818·2	2			,,	,,	35474
2817·2	2			,,	,,	35486
2816·3	4b	2816·3	,,	,,	,,	35498
2815·9	2			,,	,,	35503
2815·7	4			,,	,,	35505
2813·4	2			,,	,,	35534
2813·0	2			,,	,,	35539
2812·7	2n			,,	,,	35543
2811·7	2			,,	,,	35556
2810·98	5	2810·8	,,	,,	,,	35564·5
2809·5	2			,,	,,	35584
2809·2	2			,,	,,	35587
2807·2	4	2807·2	,,	,,	,,	35613
2807·1	2			,,	,,	35614
2805·8	2			,,	,,	35630
2805·6	2			,,	,,	35633
2804·7	2			,,	,,	35644
2804·2	2n			,,	,,	35651
2803·9	4	2803·7	,,	,,	,,	35655
2802·7	4			,,	,,	35670
2802·3	2b	2802·1	,,	,,	,,	35675
2801·2	2			,,	,,	35689
2799·2	2			,,	10·4	35714
2799·0	2			,,	,,	35717
2798·5	4	2798·8	,,	,,	,,	35723
2797·2	4	2797·0	,,	,,	,,	35740
2797·0	4	2796·7	,,	,,	,,	35743

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2796·3	4	2796·2 L. & D.	0·80	10·4	35752
2794·9	4		,,	,,	35769
2794·00	5b	2793·8 ,,	,,	,,	35780·6
2791·7	2		,,	,,	35810
2791·1	2		,,	,,	35818
2789 6	2	2789·5, 2787·3 L. & D.	,,	,,	35837
2786·1	4	2786·1 L. & D.	,,	,,	35882
2785·6	4	2785·6 ,,	,,	,,	35889
2782·8	2		0 79	,,	35925
2782·3	2n		,,	,,	35931
2781·6	2		,,	,,	35941
2780·1	2		,,	,,	35960
2779·6	2		,,	,,	35966
2779 0	4	2778·9 ,,	,,	,,	35974
2778·3	2		,,	,,	35983
2776·30	6	2776·1 ,,	,,	,,	36008·8
2775·2	4b	2775·2 ,,	,,	10·5	36023
2774·0	2		,,	,,	36039
2773·0	2		,,	,,	36052
2771·0	2b		,,	,,	36078
2769·2	4	2769·0 ,,	,,	,,	36101
2767·0	4n	2766·9 ,,	,,	,,	36130
2766·4	4	2766·4 ,,	,,	,,	36138
2764·9	2		,,	,,	36158
2763·9	4	2764·3 ,,	,,	,,	36171
2763·2	2b		,,	,,	36180
2762·4	2b		,,	,,	36190
2762·1	2		,,	,,	36194
2761·6	2	2761·4 ,,	,,	,,	36201
2761·5	2		,,	,,	36202
2760·5	2		,,	,,	36215
2758 6	2		,,	,,	36240
2758·4	2		,,	,,	36242
2758·0	2		,,	,,	36247
2757·4	2	2757·5 ,,	,,	,,	36255
2754·7	2b		,,	,,	36291
2752·4	2		,,	,,	36321
2751·0	2		,,	10·6	36340
2750·4	2b		,,	,,	36347
2748·6	2		,,	,,	36371
2745·3	4	2745·1 ,,	,,	,,	36415
2742·5	2		,,	,,	36452
2742·2	2		,,	,,	36456
2741·6	2		0·78	,,	36464
2740·5	2		,,	,,	36479
2739·2	4	2739·0 ,,	,,	,,	36496
2738·5	2		,,	,,	36505
2737·5	2		,,	,,	36519
2737·2	2		,,	,,	36523
2734·9	4b	2734·7 ,,	,,	,,	36553
2733·8	2		,,	,,	36568
2733·2	4	2733·0 ,,	,,	,,	36576
2731·3	4	2731·1 ,,	,,	,,	36602
2731·0	2		,,	,,	36606
2729·4	2n	2729·2 ,,	,,	,,	36627

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	$\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2729·0	2n		0·78	10·6	36632
2728·1	4n	2727·9 L. & D.	,,	,,	36645
2724·6	2		,,	,,	36692
2723·7	2		,,	,,	36704
2723·0	2n		,,	10·7	36713
2722·2	2		,,	,,	36724
2721·1	4	2721·0 ,,	,,	,,	36739
2720·0	2		,,	,,	36754
2719·1	2		,,	,,	36766
2717·3	2n		,,	,,	36792
2716·5	2		,,	,,	36801
2716·1	4	2715·7, 2714·9 L. & D.	,,	,,	36807
2713·5	2b	2714·3 L. & D.	,,	,,	36842
2711·9	2n		,,	,,	36864
2710·4	2		,,	,,	36884
2709·2	4n	2709·0 ,,	,,	,,	36900
2708·1	4	2707·8 ,,	,,	,,	36915
2707·6	4n	2707·3 ,,	,,	,,	36922
2706·83	6n	2706·6 ,,	,,	,,	36932·9
2706·0	2		,,	,,	36944
2704·3	2		,,	,,	36967
2702·5	4	2702·3 ,,	,,	,,	36992
2701·8	2		,,	,,	37001
2700·6	2		,,	,,	37018
2698·0	2		0·77	10·8	37053
2697·1	4	2696·8, 2696·4, 2696·3 ,,	,,	,,	37066
2695·9	2	2695·7 L. & D.	,,	,,	37082
2694·75	8	2694·5 ,,	,,	,,	37098·4
2693·1	4n	2692·9 ,,	,,	,,	37121
2692·4	2n		,,	,,	37131
2689·8	4		,,	,,	37167
2689·2	2b	2689·6 ,,	,,	,,	37175
2687·0	2b		,,	,,	37205
2686·3	2b		,,	,,	37215
2685·4	2		,,	,,	37227
2684·62	5n	2684·4 ,,	,,	,,	37238·4
2683·5	2n		,,	,,	37254
2682·8	2n		,,	,,	37264
2682·2	2		,,	,,	37272
2682·0	2	2681·9 ,,	,,	,,	37275
2680·5	4		,,	,,	37296
2680·3	2	2680·2 ,,	,,	,,	37298
2679·9	2	2679·4 ,,	,,	,,	37304
2678·2	4	2677·8 ,,	,,	,,	37328
2676·03	5n	2675·8 ,,	,,	,,	37358·0
2674·0	2		,,	10·9	37386
2673·7	2		,,	,,	37390
2673·3	2		,,	,,	37396
2672·3	4b		,,	,,	37410
2670·8	4	2670·5 ,,	,,	,,	37431
2669·9	4b	2670·1 ,,	,,	,,	37444
2668·3	2b		,,	,,	37466
2666·3	2		,,	,,	37494
2665·3	2		,,	,,	37508
2663·58	8	2663·1 ,,	,,	,,	37532·6

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2662·7	2n		0·77	10·9	37545
2662·2	2n		,,	,,	37552
2658·1	2		,,	,,	37610
2656·5	4b		,,	,,	37633
2653·74	7	2653·7 L. & D.	0·76	,,	37671·8
2652·8	4		,,	11·0	37685
2652·4	2		,,	,,	37691
2650·3	2		,,	,,	37721
2648·70	7	2648·8 ,,	,,	,,	37743·3
2646·5	2	2646·5, 2644·8 L. & D.	,,	,,	37775
2643·2	2	2643·1 L. & D.	,,	,,	37821
2641·2	2n		,,	,,	37851
2641·0	2n		,,	,,	37853
2640·5	2		,,	,,	37861
2639·3	2n		,,	,,	37878
2638·1	2		,,	,,	37895
2637·9	2		,,	,,	37898
2637·4	4		,,	,,	37905
2636·1	4		,,	,,	37924
2634·9	4	2634·9 ,,	,,	,,	37941
2632·30	8	2632·3 ,,	,,	,,	37978·6
2631·4	4		,,	11·1	37993
2631·1	4		,,	,,	37996
2630·5	2		,,	,,	38004
2628·8	2	2628·8 ,,	,,	,,	38029
2627·7	2	2627·7 ,,	,,	,,	38045
2627·0	2n	2627·0 ,,	,,	,,	38055
2625·5	2		,,	,,	38077
2625·3	4		,,	,,	38080
2624·5	2n		,,	,,	38091
2624·0	2		,,	,,	38099
2623·7	2		,,	,,	38103
2622·6	2		,,	,,	38119
2622·4	2		,,	,,	38122
2622·0	4n	2622·1 ,,	,,	,,	38128
2621·0	2b		,,	,,	38142
2619·8	4	2619·7 ,,	,,	,,	38160
2618·8	4	2618·9 ,,	,,	,,	38174
2615·3	2b		,,	,,	38226
2614·39	7	2614·2 ,,	,,	,,	38238·7
2613·60	5	2613·4 ,,	,,	,,	38250·3
2612·6	4n		,,	,,	38265
2610·4	2		,,	,,	38297
2609·0	2		0·75	11·2	38318
2608·1	2		,,	,,	38331
2605·9	5	2605·7 ,,	,,	,,	38363
2605·76	5	2605·6 ,,	,,	,,	38365·3
2604·58	4	2604·3 ,,	,,	,,	38382·7
2603·3	2		,,	,,	38411
2600·9	2	2600·7, 2699·2 L. & D.	,,	,,	38437
2594·4	2		,,	,,	38534
2594·2	2		,,	,,	38537
2593·8	4		,,	,,	38542
2593·5	2	2593·3 L. & D.	,,	,,	38547
2591·5	2		,,	,,	38577

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2589·1	4n		0·75	11·2	38612
2587·25	8	2587·2 L. & D.	"	11·3	38639·8
2585·3	2	2585·2 "	"	"	38669
2583·2	4	2583·0 "	"	"	38700
2582·30	8n	2582·1 "	"	"	38713·9
2581·4	2		"	"	38728
2580·38	8n	2580·2 "	"	"	38742·7
2575·6	2b		"	"	38815
2575·00	5	2574·8 "	"	"	38823·6
2574·5	4	2573·5 "	"	"	38831
2572·3	2	2572·3 "	"	"	38865
2569·8	4	2569·7 "	"	"	38903
2569·0	2		"	"	38915
2567·4	4	2567·4 "	"	11·4	38939
2567·0	2		"	"	38945
2565·5	4	2565·4 "	"	"	38968
2564·18	8	2564·0 "	0·74	"	38987·4
2562·7	2		"	"	39010
*2562·3	2	2562·1 "	"	"	39016
2561·0	2		"	"	39036
2560·10	7	2560·0 "	"	"	39050
2559·48	8	2559·3 "	"	"	39059·0
2558·6	2		"	"	39073
2557·4	4	2557·3 "	"	"	39091
2556·8	4	2556·7 "	"	"	39100
2555·2	2		"	"	39125
2554·2	2		"	"	39140
2554·0	2		"	"	39143
2553·3	2	2553·5 "	"	"	39154
2553·0	2	2553·1 "	"	"	39159
2552·4	4	2552·6 "	"	"	39168
2550·6	2n	2550·5 "	"	"	39195
2549·9	2n	2550·1 "	"	"	39206
2549·4	2n	2549·4 "	"	"	39214
2548·6	2		"	11·5	39226
2548·4	2		"	"	39229
2546·80	7	2546·7 "	"	"	39253·5
2546·3	4	2546·1 "	"	"	39262
2545·8	2		"	"	39269
2545·1	4	2545·0 "	"	"	39280
2544·6	4	2544·6 "	"	"	39288
2544·3	4	2544·3 "	"	"	39293
2543·8	2		"	"	39300
2543·4	2		"	"	39306
2542·00	8n	2541·9 "	"	"	39328·0
2540·72	6	2540·6 "	"	"	39347·4
2540·3	2		"	"	39354
2538·9	2		"	"	39376
2537·6	2	2537·4 "	"	"	39396
2536·8	2		"	"	39409
2536·6	2	2536·5 "	"	"	39412
2536·1	4	2535·9 "	"	"	39420
2535·7	2		"	"	39426
2535·4	2		"	"	39431
2534·5	2n		"	"	39445

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2534·0	6		0·74	11·5	39452
2533·95	4	2533·8 L. & D.	„	„	39452·6
2531·9	2n	2532·1 „	„	„	39485
2530·17	5	2530·0 „	„	11·6	39511·4
2529·6	2		„	„	39520
2529·1	2		„	„	39528
2528·68	7	2528·5 „	„	„	39534·7
2528·3	4		„	„	39540
2526·2	2		„	„	39573
2525·08	7	2524·9 „	„	„	39591·1
2524·7	4	2524·6 „	„	„	39597
2523·0	4	2522·9 „	„	„	39623
2521·52	5		„	„	39647·0
2521·0	2	2521·1 „	„	„	39655
2519·90	8	2519·7 „	„	„	39672·5
2517·9	2	2517·7 „	0·73	„	39704
2517·5	4	2517·3 „	„	„	39710
2515·6	2		„	„	39740
2514·0	2		„	„	39765
2513·1	2		„	„	39780
2512·4	2		„	„	39791
2512·2	2	2512·1 „	„	„	39794
2511·9	2	2511·8 „	„	11·7	39798
2511·23	7	2510·9 „	„	„	39808·0
2509·3	2	2509·8 „	„	„	39840
2508·1	4	2507·9 „	„	„	39859
2506·8	2		„	„	39879
2506·51	8	2506·2 „	„	„	39884·4
2505·7	2n		„	„	39897
2504·0	2	2504·5 „	„	„	39924
2500·9	2	2502·1 „	„	„	39974
2500·6	2	2500·6 „	„	„	39978
2498·91	5	2498·6 „	„	„	40005·7
2497·6	4	2497·5 „	„	„	40026
2496·8	2	2496·7 „	„	„	40039
2495·5	2	2495·5 „	„	„	40060
2494·7	2	2494·9 „	„	„	40073
2493·6	2		„	11·8	40101
2492·4	2		„	„	40110
2492·2	2		„	„	40113
2491·4	2		„	„	40126
2491·2	2		„	„	40129
2490·8	2	2490·8 „	„	„	40136
2490·47	5	2490·2 „	„	„	40141·3
2487·4	4	2487·3 „	„	„	40191
2487·2	4	2487·1 „	„	„	40194
2486·52	6	2486·3 „	„	„	40205·0
2485·47	5	2485·2 „	„	„	40222·0
2484·4	2	2484·8 „	„	„	40239
2484·3	2	2484·5 „	„	„	40241
2484·1	2		„	„	40244
2483·6	4	2483·6 „	„	„	40252
2483·3	2		„	„	40257
2482·2	2		„	„	40275
2480·2	2		„	„	40307

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2479·1	4	2479·0 L. & D.	0·73	11·8	40325
2478·5	2		,,	,,	40335
2478·2	4	2478·2 ,,	,,	,,	40340
2477·4	4	2477·5 ,,	,,	,,	40353
2477·3	4	2477·3 ,,	,,	,,	40355
2476·6	2	2476·6 ,,	,,	11·9	40366
2476·4	2	2476·4, 2475·3 L. & D.	,,	,,	40369
2473·1	2	2473·9 L. & D.	,,	,,	40423
2472·9	2	2472·9 ,,	,,	,,	40426
2471·8	2b		,,	,,	40444
2470·3	2	2470·1 ,,	,,	,,	40469
2469·5	4	2469·4 ,,	0·72	,,	40482
2467·14	5	2466·9 ,,	,,	,,	40520·9
2464·30	6	2464·1 ,,	,,	,,	40567·6
2462·1	2		,,	,,	40604
2461·8	2		,,	,,	40608
2461·2	2	2461·2 ,,	,,	,,	40619
2460·2	2	2460·7 ,,	,,	,,	40635
2459·3	4	2459·4 ,,	,,	12·0	40650
2456·2	2	2456·1 ,,	,,	,,	40701
2455·5	2n		,,	,,	40713
2454·5	2		,,	,,	40729
2454·2	2	2454·0 ,,	,,	,,	40734
2453·8	2	2453·7 ,,	,,	,,	40741
2453·3	4	2453·1 ,,	,,	,,	40749
2452·5	4	2452·4 ,,	,,	,,	40763
2451·6	2n		,,	,,	40778
2450·05	6	2449·8 ,,	,,	,,	40803·5
2449·2	4	2449·1 ,,	,,	,,	40818
2447·80	6	2447·7 ,,	,,	,,	40841·0
2446·6	2		,,	,,	40861
2446·07	6	2446·0 ,,	,,	,,	40869·9
2443·88	6	2443·7 ,,	,,	12·1	40906·4
2442·72	6	2442·4 ,,	,,	,,	40925·9
2441·7	4	2441·6 ,,	,,	,,	40943
2441·1	2n	2441·0 ,,	,,	,,	40953
2439·0	4	2440·1 ,,	,,	,,	40988
2438·4	2n	2438·9 ,,	,,	,,	40998
2438·0	4	2438·3 ,,	,,	,,	41005
2437·0	4	2436·9 ,,	,,	,,	41022
2436·7	2	2436·6 ,,	,,	,,	41027
2436·3	2	2436·2 ,,	,,	,,	41034
2435·1	4	2435·0 ,,	,,	,,	41054
2434·2	2		,,	,,	41069
2432·60	5	2432·4 ,,	,,	,,	41096·2
2432·3	4		,,	,,	41101
2431·7	2		,,	,,	41111
2430·8	2		,,	,,	41127
2430·6	2	2430·4 ,,	,,	,,	41130
2429·9	4	2430·0 ,,	,,	,,	41142
2429·5	2		,,	,,	41149
2428·4	4	2428·2 ,,	,,	,,	41167
2426·6	2		,,	12·2	41198
2426·2	4	2426·1 ,,	,,	,,	41205
2425·0	4	2424·9 ,,	,,	,,	41225

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
*2423·7	4	2423·6 L. & D.	0·72	12·2	41247
2422·6	2n	2422·5 „	„	„	41266
2422·1	2	2422·0 „	„	„	41274
2421 0	2		0·71	„	41293
2420·8	4	2420·7 „	„	„	41297
2419·3	2		„	„	41322
2418·5	4	2418·5 „	„	„	41336
2417·7	4	2417·6 „	„	„	41350
2417·0	4	2416·9, 2416·1 L. & D.	„	„	41362
2416·0	4	2415·9 L. & D.	„	„	41379
2415·3	4	2415·2 „	„	„	41391
2414·5	2	2414·6 „	„	„	41404
2414·2	4	2414·1, 2412·6 „	„	„	41410
2411·6	4	2411·6 L. & D.	„	12·3	41454
2409·5	2n		„	„	41490
2408·8	4	2408·7 „	„	„	41502
2408·4	4	2408·2 „	„	„	41509
2407·7	4	2407·5 „	„	„	41521
2407·5	4n	2407·3 „	„	„	41525
2406·3	2n		„	„	41546
2406·0	2n		„	„	41551
2405·2	2	2405·5 „	„	„	41565
2404·6	4	2404·5 „	„	„	41575
2404·3	4	2404·2 „	„	„	41580
2403·8	4	2403·7 „	„	„	41589
2402·9	2	2402·8 „	„	„	41604
2402·1	2	2402·0 „	„	„	41618
2401·6	2	2401·7 „	„	„	41627
2399·1	2		„	„	41670
2398·4	4	2398·2 „	„	„	41682
2397·42	6	2397·3 „	„	12·4	41699·1
2396·8	2		„	„	41710
2395·5	4	2395·5 „	„	„	41733
2394·5	4		„	„	41750
2394·0	2	2393·8 „	„	„	41759
2392·6	4	2392·5 „	„	„	41784
2391·2	2	2391·9 „	„	„	41808
2389·5	4	2389·5 „	„	„	41838
2388·95	6	2388·8, 2388·7 „	„	„	41847·0
2386·7	4	2386·5 L. & D.	„	„	41887
2386·4	4	2386·3 „	„	„	41892
2385·6	2		„	„	41906
2384·0	2		„	„	41934
2383·48	5	2383·3 „	„	„	41943·0
2383·1	2		„	12·5	41950
2382·3	4	2382·1 „	„	„	41964
2381·9	2	2381·7 „	„	„	41971
2381·73	5		„	„	41973·8
2381·0	2		„	„	41987
2380·5	2	2380·7 „	„	„	41996
2378·60	7	2378·5 „	„	„	42029·0
2377·1	2n		„	„	42056
2376·9	2		„	„	42060
2375·2	4	2375·2 „	„	„	42090
2373·7	2		0·70	„	42116

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2373·4	2		0·70	12·5	42122
2373·1	2	2273·0 L. & D.	,,	,,	42127
2372·5	2	2272·2 ,,	,,	,,	42138
2371·9	4	2271·9 ,,	,,	,,	42148
2371·6	2		,,	,,	42154
2370·7	4	2270·5 ,,	,,	,,	42170
2369·7	2		,,	,,	42187
2367·4	2b		,,	12·6	42227
2367·2	2	2267·0 ,,	,,	,,	42231
2366·7	2		,,	,,	42240
2365·6	2n		,,	,,	42260
2365·2	2		,,	,,	42267
2365·0	2		,,	,,	42270
2363 82	7	2263·7 ,,	,,	,,	42291·8
2362·6	2		,,	,,	42313
2362·3	2		,,	,,	42319
2361·6	4	2261·6 ,,	,,	,,	42331
2361·1	2	2261·2 ,,	,,	,,	42340
2360·7	4	2260·7 ,,	,,	,,	42347
2360·4	4	2260·4 ,,	,,	,,	42353
2359·0	2		,,	,,	42378
2358·2	4	2258·1 ,,	,,	,,	42392
2356·6	2		,,	,,	42421
2356·5	2		,,	,,	42423
2355·6	2		,,	,,	42439
2355·0	2		,,	,,	42450
2354·5	2		,,	12·7	42459
2353·47	5	2253·4 ,,	,,	,,	42477·7
2352·2	2	2252·5 ,,	,,	,,	42500
2351·9	4	2251·9 ,,	,,	,,	42506
2351·2	4	2251·0 ,,	,,	,,	42518
2348·4	2b	2248·5 ,,	,,	,,	42569
2347·8	4	2247·8 ,,	,,	,,	42580
2347·4	4	2247·4 ,,	,,	,,	42587
2347·2	2	2247·1 ,,	,,	,,	42591
2346·6	4	2246·6 ,,	,,	,,	42602
2345·5	4	2245·6 ,,	,,	,,	42622
2345·4	2		,,	,,	42624
2344·7	4	2244·7 ,,	,,	,,	42636
2344·3	4	2244·4 ,,	,,	,,	42644
2343·6	2		,,	,,	42656
2342·4	2		,,	,,	42678
2341·2	4	2241·2 ,,	,,	,,	42700
2340·3	2		,,	12·8	42717
2339·5	2		,,	,,	42731
2339·0	4	2239·2 ,,	,,	,,	42740
2338·7	2		,,	,,	42746
2338·0	4	2238·0 ,,	,,	,,	42759
2337·5	2		,,	,,	42768
2337·1	2	2237·0 ,,	,,	,,	42775
2336·3	4	2236·3 ,,	,,	,,	42790
2334·8	2		,,	,,	42817
2334·2	4	2234·1 ,,	,,	,,	42828
2333·6	2		,,	,,	42839
2333·1	2		,,	,,	42848

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
2330·4	4	2330·4 L. & D.	0·70	12·8	42898
2329·2	4	2329·1 ,,	,,	,,	42920
2327·7	4	2327·7 ,,	,,	,,	42948
2327·2	2		,,	12·9	42957
2326·5	4	2326·5 ,,	,,	,,	42970
2326·1	4	2326·3 ,,	,,	,,	42977
2324·3	4	2324·4 ,,	0 69	,,	43011
2320·5	2	2321·4 ,,	,,	,,	43081
2319·9	2	2320·0 ,,	,,	,,	43092
2318·4	2	2318·6 ,,	,,	,,	43120
2318·2	2		,,	,,	43124
2317·1	4	2317·2 ,,	,,	,,	43144
2316·1	2	2315·9 ,,	,,	,,	43163
2314·2	4	2314·9 ,,	,,	13·0	43198
2313·7	2	2313·9, 2313·5 L. & D.	,,	,,	43208
2312·6	2	2312·5 L. & D.	,,	,,	43228
2311·6	4	2311·5, 2310·8 L. & D.	,,	,,	43247
2309·3	2		,,	,,	43290
2309·0	2		,,	,,	43296
2307·7	4	2307·8 L. & D.	,,	,,	43320
2307·5	2	2306·8 ,,	,,	,,	43324
2306·1	2n	2306·0 ,,	,,	,,	43350
2305·1	2		,,	,,	43369
2304·1	2	2304·2 ,,	,,	,,	43388
2303·0	2		,,	,,	43409
2302·5	2		,,	,,	43418
2302·0	2		,,	,,	43427
2301·4	4	2301·2 ,,	,,	,,	43439
2300 2	2	2300·7 ,,	,,	13·1	43461
2299·9	2	2299·7 ,,	,,	,,	43467
2298·9	2	2298·7 ,,	,,	,,	43486
2297·3	2	2297·3 ,,	,,	,,	43516
2296·7	2		,,	,,	43528
2296·0	2	2295·9 ,,	,,	,,	43541
2295·2	2		,,	,,	43556
2293·5	2		,,	,,	43588
2293·4	4	2293·4 ,,	,,	,,	43590
2292·1	4	2291·9 ,,	,,	,,	43615
2291·5	2	2291·3 ,,	,,	,,	43627
2290·5	2	2290·3 ,,	,,	,,	43646
2287·9	2	2288 2 ,,	,,	13·2	43695
2287·8	2		,,	,,	43697
2287·2	2		,,	,,	43709
2286·30	5	2286·1 ,,	,,	,,	43725·6
2283·6	2	2283·5 ,,	,,	,,	43778
2282·5	2	2282·3 ,,	,,	,,	43799
2282·0	4	2281·9 ,,	,,	,,	43808
2281·2	2		,,	,,	43824
2280 6	2n	2280·5 ,,	,,	,,	43835
2278·9	2		,,	,,	43868
2278·7	2	2278·5 ,,	,,	,,	43872
2277·4	2		0·68	,,	43897
2277·0	2		,,	,,	43904
2276·6	2		,,	,,	43912
2276·3	2	2276·3 ,,	,,	,,	43918

COBALT—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2275·8	2	2275·5 L. & D.	0·68	13·3	43928
2275·5	2	2274·6 ,,	,,	,,	43933
2273·3	2n	2273·7 ,,	,,	,,	43976
2272·4	2	2272·4 ,,	,,	,,	43993
2271·4	2	} 2270·9 ,,	,,	,,	44013
2270·4	2		,,	,,	44032
2269·8	2		,,	,,	44044
2268·3	2		,,	,,	44073
2266·5	4	2266·6 ,,	,,	,,	44108
2264·6	2		,,	,,	44145
*2261·7	2		,,	13·4	44202
2260·1	4	2260·1 ,,	,,	,,	44233
2256·7	4	2256·8 ,,	,,	,,	44299
2256·1	2		,,	,,	44311
2253·5	4	2253·6 ,,	,,	,,	44362
2252·3	2b		,,	,,	44386
2251·2	2n		,,	,,	44408
2250·5	2n		,,	13·5	44422
2250·1	2n		,,	,,	44429
2248·7	2		,,	,,	44457
2248·2	2		,,	,,	44467
2246·9	2		,,	,,	44493
2246·2	2n		,,	,,	44507
2245·2	4	2245·2 ,,	,,	,,	44526
2242·8	2		,,	,,	44574
2242·6	2		,,	,,	44578
2237·1	2	2234·8 ,,	,,	13·6	44687
2232·1	4	2231·9 ,,	,,	,,	44787
2230·5	4n	2229·9 ,,	,,	,,	44819
2229·1	2		0·67	,,	44847
2225·0	2		,,	13·7	44930
2220·3	4b	2220·0, 2216·3 L & D.	,,	,,	45025
2213·9	4	2214·5 L. & D.	,,	13·8	45155
2211·5	2		,,	,,	45204
2206·3	4	2206·1 ,,	,,	,,	45311
2205·9	2		,,	,,	45319
2205·6	2		,,	,,	45325
2205·2	2		,,	,,	45333
2203·0	2	2198·6 ,,	,,	13·9	45379
2193·7	4	2193·5 ,,	,,	,,	45571
2192·6	2		,,	,,	45594
2192·3	2	2192·3 ,,	,,	14·0	45600
2190·9	2		,,	,,	45629
2190·7	4	2190·6 ,,	,,	,,	45634

R.—The lines marked R. are from Rowland's Table of Standard Wave-lengths (Appendix G) or from the Table of Corrections in the 'Astrophysical Journal' of December 1897.

Nickel.

Hasselberg, 'Kongl. Svenska Vetenskaps-Akadem. Handl.' Bd. 28, No. 6, 1896.
Exner and Haschek, 'Sitzber. kaiserl. Akad. Wissensch. Wien,' cv. (2), 1896, cvi. (2), 1897.

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda+$	$\frac{1}{\lambda}-$	
*5893·13	5	5893·22 Th. 5893·098R.	1·61	4·6	16964·3
*5858·03	4	5857·72 „	1·60	„	17066·0
*5847·26	2		1·59	„	17097·4
*5805·45	4	5805·448 Rowland	1·58	4·7	17220·5
*5796·35	2		„	„	17247·5
*5761·10	5	5754·884 Rowland	1·57	„	17353·1
*5754·86	6		„	„	17371·9
*5748·57	3		„	„	17390·9
*5715·31	6	5715·309 Rowland	1·56	4·8	17492·1
*5712·10	6		„	„	17501·9
*5709·80	7	5709·760 Rowland	„	„	17508·9
*5695·22	6n		1·55	„	17553·8
*5682·44	7n	5682·427 Rowland	„	„	17593·3
*5670·22	4		„	„	17631·2
*5664·28	5		1·54	„	17649·7
*5649·90	5		„	„	17694·6
*5643·31	3n		„	„	17715·3
*5642·08	3		„	„	17719·2
5639·02	3		„	„	17728·8
*5637·32	4		„	„	17734·1
*5628·62	3		„	„	17761·5
*5625·56	6		1·53	„	17771·2
*5615·00	6s		„	„	17804·6
*5600·29	4		„	4·9	17851·3
*5594·00	6		„	„	17871·4
*5592·44†	7s		„	„	17876·4
*5589·63	4n		1·52	„	17885·4
*5588·12	5s		„	„	17890·2
*5578·98	5		„	„	17919·5
*5553·97	4s		„	„	18000·2
*5510·28	5s		1·50	„	18143·0
5504·50	3		„	„	18162·1
*5495·20	3s		„	5·0	18192·7
*5477·13	10	5477·20 Th. 5477·128R.	„	„	18252·7
*5468·42	2		1·49	„	18281·8
*5462·71	4	5462·732 Rowland	„	„	18300·9
*5436·10	5s		1·48	„	18390·5
*5424·85	4		„	„	18428·7
*5411·50	4s		„	„	18474·2
*5392·68	2		1·47	5·1	18538·6
*5388·71	2		„	„	18552·2
*5371·64	5	5371·686 Rowland	„	„	18611·2
*5268·59	2		1·44	„	18975·1
*5220·51	2		1·43	„	19149·9
*5216·72	2		„	„	19163·8
*5197·40	2		1·42	5·3	19235·1
5192·70	2		„	„	19252·5

* Coincident with a solar line.
† Solar line double; least refrangible component due to Nickel.
‡ Observed also by Exner and Haschek in the Spark spectrum.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
*5186·80	2		1·42	5·3	19274·4
*5184·78	3		,,	,,	19281·9
*5176·73	4	5176·71 Th.	,,	,,	19311·9
*5168·83	5	5169·41 ,,	1·41	,,	19341·4
*5158·20	2		,,	,,	19381·3
*5155·92	7n	5156·21 ,, 5155·937 R.	,,	,,	19389·9
*5155·34	4n		,,	,,	19392·1
*5153·43	4		,,	,,	19399·3
*5146·64	8n	5146·81 ,, 5146·664 ,,	,,	,,	19424·9
*5142·96	7n	5143·11 ,, 5142·967 ,,	,,	,,	19438·8
*5137·23	8s	5137·91 ,,	1·40	,,	19460·4
*5131·94	3n		,,	,,	19480·5
*5130·55	2		,,	,,	19485·8
*5129·52	6		,,	,,	19489·7
*5125·39§	5		,,	,,	19505·4
5121·74	3	5121·797 Rowland	,,	,,	19519·3
*5115·55	8s	5116·00 Th. 5115·558 R.	,,	5·4	19542·8
*5103·13	4		,,	,,	19590·4
*5100·13	7n	5100·66 ,,	1·39	,,	19601·9
*5099·50	5s	5099·46 ,,	,,	,,	19604·4
*5097·06	4n		,,	,,	19613·7
*5094·61	2		,,	,,	19623·2
*5089·13	2		,,	,,	19644·3
*5088·74	2		,,	,,	19645·8
*5084·27	8n		,,	,,	19663·1
*5082·55	5n		,,	,,	19669·8
*5081·30	10n	5081·56 ,,	,,	,,	19674·6
*5080·70	10	5080·70 ,,	,,	,,	19676·9
*5080·16	3		,,	,,	19679·0
*5058·22	2		1·38	,,	19764·4
*5051·74§	2n		,,	,,	19789·7
*5049·01†	5n		,,	,,	19800·5
*5042·35	5n		,,	,,	19826·6
*5038·80	4		,,	,,	19840·6
*5035·55	10	5035·56 ,, 5036·113 R.	,,	,,	19853·4
*5018·50	4n		1·37	5·5	19920·8
*5017·75	7	5017·46 ,,	,,	,,	19923·8
*5012·62	4s		,,	,,	19944·1
*5011·11	3n		,,	,,	19950·2
*5010·22	2		,,	,,	19953·7
*5003·92	2		,,	,,	19978·8
*5000·48§	5n		,,	,,	19992·6
*4998·42	4		,,	,,	20000·8
*4997·04	2n		,,	,,	20006·3
*4984·30	7	4984·10 ,,	1·36	,,	20057·6
*4980·36	7	4980·40 ,, 4980·362 R.	,,	,,	20073·4
*4976·54	2		,,	,,	20088·8
*4971·54	3		,,	,,	20109·0
*4953·34	3		1·35	,,	20182·9

§ Solar line double $\begin{cases} 5051{\cdot}75 \\ 5051{\cdot}85. \end{cases}$

† Not coincident with Chromium, 5048·96.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
*4946·20	2		1·35	5·5	20212·0
*4945·63	3n		,,	,,	20214·4
*4937·51	4n		,,	5·6	20247·5
*4936·02	4s	4935·90 Thalén	,,	,,	20253·6
*4925·74	3		,,	,,	20295·9
*4918·86	2		,,	,,	20324·3
*4918·53	5s	4918·40 ,,	,,	,,	20325·7
*4914·15	4n	4914·150 Rowland	1·34	,,	20343·8
*4912·22	3n		,,	,,	20351·8
*4904·56	7	4904·70 Thalén	,,	,,	20383·6
*4887·16	3		,,	,,	20456·2
*4874·95	2		1·33	,,	20507·4
*4873·60	4	4873·80 ,,	,,	,,	20513·1
*4870·97†	4		,,	,,	20524·2
*4866·42	7	4866·20 ,,	,,	,,	20543·4
*4864·46	2n		,,	,,	20551·7
*4864·11	3n		,,	,,	20553·1
*4857·57	3		,,	5·7	20580·7
*4855·57	6	4855·60 ,,	,,	,,	20589·2
*4852·70	3n		,,	,,	20601·4
*4843·27	2		,,	,,	20641·5
*4838·80	4		1·32	,,	20660·6
*4832·86	3		,,	,,	20686·0
*4831·30	5	4831·10 ,,	,,	,,	20692·7
*4829·18	6	4829·30 ,,	,,	,,	20701·7
*4821·29	2		,,	,,	20736·0
*4817·97	2		,,	,,	20749·9
*4814·77	2		,,	,,	20763·7
*4812·15	2		,,	,,	20775·0
*4809·05	2		,,	,,	20788·4
*4807·17	4		,,	,,	20796·6
*4792·98	2		1·31	,,	20858·1
*4786·66	6	4786·64 ,,	,,	,,	20885·7
*4786·42	2		,,	,,	20886·7
*4773·55	2		,,	5·8	20943·0
*4764·07	4		1·30	,,	20984·7
*4762·78	3		,,	,,	20990·3
*4756·70	6	4755·84 ,,	,,	,,	21017·2
*4754·95	3		,,	,,	21024·9
*4752·58	4		,,	,,	21035·4
*4752·30	3		,,	,,	21036·6
*4732·66	4		,,	,,	21124·0
*4732·00	4		,,	,,	21126·9
*4729·50	2		1·29	,,	21138·1
*4728·06	2		,,	,,	21144·5
‡*4715·93	6		,,	,,	21198·9
‡*4714·59	9	4714·54 Th. 4714·599 R.	,,	,,	21205·0
*4712·24	2		,,	,,	21215·5
‡*4703·96	5n	4703·986 Rowland	,,	5·9	21252·8
‡*4701·72	4		,,	,,	21262·9
‡*4701·52	2		,,	,,	21263·8
‡*4686·39†	5s	4686·395 ,,	1·28	,,	21332·5
*4675·80	2		,,	,,	21380·8

† Not coincident with Chromium, 4870·96, 4686·38.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
‡*4667·96	4		1·28	5·9	21416·7
‡*4667·16	3		"	"	21420·4
*4655·85	2		"	"	21472·5
‡*4648·82	6	4647·88 Th. 4648·835 R.	1·27	"	21504·9
*4647·47	3		"	"	21511·2
*4618·22§	3		"	6·0	21647·4
*4614·85	2		1·26	"	21663·2
‡*4606·37	5		"	"	21703·1
‡*4605·15	8		"	"	21708·8
‡*4600·51	6		"	"	21730·7
‡4596·11	4n		"	"	21751·5
‡*4595·07	4		"	"	21756·5
‡*4592·69§	7		"	"	21767·7
*4580·77	3		1·25	"	21824·4
4567·59	2		"	"	21887·4
*4560·10	4		"	6·1	21923·2
*4553·37	3		"	"	21955·7
‡*4551·45	4		"	"	21964·9
‡*4547·44	5		"	"	21984·3
‡*4547·14§	4		"	"	21985·7
‡*4520·20	5s		1·24	"	22116·8
‡*4513·20	4		"	"	22151·1
4506·53	2		"	"	22183·9
*4490·71	4n		1·23	6·2	22262·0
*4481·30	2n		"	"	22308·8
‡*4470·61	8		"	"	22362·1
‡*4466·54	4		1·22	"	22382·5
‡*4463·57	4		"	"	22397·4
‡*4462·59	8		"	"	22402·3
*4459·21§‡‡	9		"	"	22419·3
4450·44	2		"	"	22463·5
4450·29	2		"	"	22464·2
‡4442·61	4		"	"	22503·1
4441·64	2		"	"	22508·0
‡4437·75	4		"	"	22527·7
‡*4437·17	5		"	"	22530·7
4423·24	3		1·21	6·3	22601·6
‡*4410·70	5n		"	"	22665·8
*4401·70§‡‡	9		"	"	22712·2
*4401·02	4		"	"	22715·7
*4399·75	4		"	"	22722·3
‡*4398·78	2		"	"	22727·3
4390·47	3n		1·20	"	22770·3
‡*4390·00	4		"	"	22772·7
‡4386·62	3n		"	"	22790·3
‡*4384·68	5		"	"	22800·4
4383·05	2		"	"	22808·9
*4370·21	3n		"	"	22875·9
‡*4368·45	4		"	6·4	22885·0
‡*4359·73‖	6s	4359·778 Roland	"	"	22930·8

§ Solar line double { 4618·22 Ni, 4618·15 } { 4592·70 Ni, 4592·80 Fe } { 4547·15 Ni, 4547·25 Fe } { 4459·20 Ni, 4459·30 Fe } { 4401·70 Ni., 4401·60 }

‖ Solar line triple { 4359·80 Ba., 4359·78 Cr., 4359·73 Ni. }

‡‡ Exner and Haschek's numbers 4459·19 4401·72.

Also 4653·0, 52·5, 4464·5, 51·8, 4362·2.—E. and H.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	1/λ −	
‡*4356·07	4n		1·19	6·4	22950·1
‡4331·78	6		,,	,,	23078·8
*4330 85	5		,,	,,	23083·8
*4325·75	5s		,,	,,	23111·0
*4325·49	3n		,,	,,	23112·4
*4307·40	3		1·18	6·5	23209·4
*4298·94	2		,,	,,	23255·0
‡*4298·68	3		,,	,,	23256·5
*4297·15	2		,,	,,	23264·7
‡*4296·06	6		,,	,,	23270·6
‡*4288·16§	7		,,	,,	23313·5
‡*4284·83	5		,,	,,	23331·6
*4252·25	2		1·17	6·6	23510·4
4236·55	3		1·16	,,	23597·5
‡4231·23	4		,,	,,	23627·2
4221·87	2		,,	,,	23679·6
4202·33	2		1·15	,,	23789·7
‡*4201·88	5s		,,	,,	23792·3
‡*4200·61	4s		,,	,,	23799·5
‡*4195·71§	5		,,	6·7	23827·2
‡4184·65	3		,,	,,	23890·2
‡4167·16	3n		,,	,,	23990·5
‡*4164·82	2s		1·14	,,	24003·9
‡*4150·55	3		,,	,,	24086·5
*4143·12	2		,,	6·8	24129·6
*4142·47	4		,,	,,	24133·4
*4142·34	2		,,	,,	24134·1
‡4138·67	2		,,	,,	24155·6
4123·96	2		1·13	,,	24241·7
‡*4121·48	6s		,,	,,	24256·3
‡*4116·14	4		,,	,,	24287·8
4104·37	2		,,	,,	24357·5
‡*4086·30	2		1·12	6·9	24465·1
4075·75	3n		,,	,,	24528·5
4075·05	3s		,,	,,	24532·7
4073·08	2		,,	,,	24544·5
4069·39	2		,,	,,	24566·8
4064·55	4		,,	,,	24596·1
‡4057·45	2		,,	,,	24639·1
4046·91	2		1·11	7·0	24703·2
*4025·26	3		,,	,,	24836·1
‡4022·20	2		,,	,,	24855·0
‡*4019·20	3		,,	,,	24873·6
‡4017·65	4n		,,	,,	24883·2
‡4010·14	3		1·10	,,	24929·8
‡*4006·30	4		,,	,,	24953·7
*3995·45	7		,,	7·1	25021·4
3994·13	4n	3994·092 Rowland	,,	,,	25029·5
‡3984·18	4n		,,	,,	25092·1
‡3974·83	4n	3974·536 ,,	1·09	,,	25151·2
‡*3973·70§	8		,,	,,	25158·4

§ Solar line double {4288·15, 4288·05} {4195·77 Fe, 4195·71 Ni} {3973·81 Fe., 3973·70 Ni.}

Also 4328·7, 13·6, 02·2, 4279·4, 45·0, 35·4, 4192·2, 31·2, 18·7, 10·5, 4083·0, 67·2, 59·0, 51·5, 21·1, 15·5, 12·7, 00·7, 3978·8.—E. and H.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
‡*3972·31	5		1·09	7·1	25167·2
‡3970·65	4n	3970·631 Rowland	„	„	25177·7
3954·61	3n		„	7·2	25279·7
‡3944·25	7n		„	„	25346·2
‡3914·65	2		1·08	„	25537·9
‡*3913·12	4		„	„	25547·9
*3912·44	3n		„	„	25552·3
*3909·10	3n		„	7·3	25574·0
‡*3905·67	3		„	„	25596·5
‡*3889·80	5s		1·07	„	25701·0
‡*3871·73	3		„	„	25821·0
‡*3863·21	5		„	„	25880·0
*3858·40‡‡	9r	3858·42 L. & D.	„	„	25910·2
‡*3844·71	3		1·06	„	26002·5
*3844·40	3n		„	„	26004·6
‡*3833·02	4	3833·026 Rowland	„	„	26081·8
‡*3832·44	5	3832·32 L. & D.	„	„	26085·7
*3831·82‡‡	6		„	„	26090·0
3829·49	5		„	„	26105·8
‡*3811·46§	2		1·05	7·4	26229·3
*3807·30‡‡	8	3807·22 „	„	„	26257·9
‡*3793·75	6s		„	„	26351·7
‡*3792·48	5s		„	„	26360·6
*3783·67‡‡	8	3783·62 „ 3783·674 R.	„	„	26422·0
*3778·22	3		„	„	26460·1
*3775·71‡‡	9	3775·62 „	1·04	„	26477·7
‡*3772·70	5s		„	7·5	26498·7
*3769·58‡‡	2	3769·50 „	„	„	26520·7
‡*3762·76	4		„	„	26568·7
‡*3749·15§	4s		„	„	26665·2
‡*3744·68	5s		„	„	26697·1
‡*3739·89	2		„	„	26731·3
‡*3739·36†	5		„	„	26735·0
*3736·94‡‡	7s	3736·70 „ 3736·969 R.	1·03	„	26752·4
‡*3730·88	3		„	„	26795·8
‡*3729·05	2		„	„	26809·0
‡*3724·95	3	3724·80 „	„	7·6	26838·4
*3722·63‡‡	6	3722·691 Rowland	„	„	26855·1
‡*3715·61	3		„	„	26905·9
*3713·87	2		„	„	26918·5
*3713·49	2		„	„	26921·2
‡*3697·04	2		„	„	27041·1
‡*3694·10§	4		1·02	„	27062·6
*3688·58‡‡	5s	3688·19 L. & D.	„	„	27103·1
3683·65	2		„	7·7	27139·3
*3674·28§‡‡	7s	3673·99 „	„	„	27208·5
*3670·57‡‡	5s	3670·29 „	„	„	27236·0

§ Solar line double { 3811·56 Ti, 3811·46 Ni } { 3694·20 Fe, 3694·10 Ni } { 3674·28 Ni., 3674·18 Fe. }

† Solar line triple { 3739·46 Fe., 3739·36 Ni., 3739·26 Fe. }

‡‡ Exner and Haschek's numbers: 3858·43, 31·82, 07·28, 3783·64, 75·71, 69·58, 36·97, 22·64, 3688·54, 74·26, 70·56.

Also 3953·0, 41·8, 41·0, 13·3, 11·2, 10·6, 10·0, 08·6, 06·8, 06·6, 06·1, 05·3, 04·3, 02·3, 3896·1, 94·9, 84·4, 83·2, 82·0, 81·1, 77·2, 76·0, 69·8, 68·5, 67·9, 55·1, 49·7, 38·3, 17·8, 3799·1, 98·1, 87·2, 40·2, 34·3, 31·0, 30·2, 29·9, 27·6, 26·2, 09·0, 08·0, 01·3, 3699·2, 91·1, 89·5, 77·7.—E. and H.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}$−	
‡*3669·38§	4s		1·02	7·7	27244·9
‡*3668·35	2		,,	,,	27252·5
*3664·24‡‡	6s	3663·99 L. & D.	,,	,,	27283·1
‡*3662·10	4s		,,	,,	27299·0
‡3644·13	2		1·01	,,	27433·7
‡3642·58	2		,,	,,	27445·4
‡*3641·78	3		,,	,,	27451·4
‡*3635·10	4s	3635·49 ,,	,,	7·8	27501·8
‡*3630·04	3		,,	,,	27540·1
*3624·87§‡‡	6s	3624·68 ,,	,,	,,	27579·4
*3619·52‡‡	10nr	3619·38 ,,	,,	,,	27620·2
*3612·86‡‡	7	3612·68 ,,	1·00	,,	27671·1
‡*3611·58	2		,,	,,	27680·9
*3610·60‡‡	4r	3610·38 ,,	,,	,,	27688·4
‡*3609·44	5		,,	,,	27697·3
‡*3607·02	2		,,	,,	27715·9
*3602·41‡‡	5		,,	,,	27751·4
*3597·84‡‡	7n	3597·58 ,,	,,	,,	27786·7
‡*3588·08	5s		,,	7·9	27862·2
*3577·37	2		0·99	,,	27945·6
*3571·99‡‡	7nr	3571·78 ,,	,,	,,	27987·7
*3566·50‡‡	9nr	3566·27 ,,	,,	,,	28030·8
‡*3561·91	4s	3561·67 ,,	,,	,,	28066·9
‡*3560·08	2		,,	,,	28081·4
‡*3553·63	4	3553·37 ,,	,,	,,	28132·3
*3551·66	5	3551·37 ,,	,,	8·0	28147·8
‡‡*3548·34§§	5	3548·07 ,,	,,	,,	28174·2
*3533·89	2n		0·98	,,	28289·4
‡*3530·73	3	3530·47 ,,	,,	,,	28314·8
‡*3529·76	2		,,	,,	28322·5
‡*3529·03	3		,,	,,	28328·4
‡*3528·13	5		,,	,,	28335·6
*3524·65‡‡	10nr	3524·46 ,,	,,	,,	28363·6
*3523·19	3		,,	,,	28375·4
*3519·90‡‡	6	3519·66 ,,	,,	,,	28401·9
‡*3518·80	4	3518·56 ,,	,,	,,	28410·8
‡*3516·35	4		,,	,,	28430·6
*3515·17‡‡	9nr	3514·96 ,,	,,	,,	28440·1
*3514·06‡‡	5		,,	,,	28449·1
*3510·47‡‡	8nr	3510·26 ,,	,,	8·1	28478·1
‡*3507·85	4s	3507·86 ,,	,,	,,	28499·4
‡*3502·76	4		,,	,,	28540·8
*3501·00‡‡	6	3500·55 ,, 3500·993 R.	,,	,,	28555·2
‡*3496·50	2		0·97	,,	28591·9
*3493·10‡‡	9nr	3492·85 ,,	,,	,,	28619·8
‡*3486·04	5	3485·75 ,, 3486·036 ,,	,,	,,	28677·7

§ Solar line double { 3973·81 Fe / 3973·70 Ni } { 3811·56 Ti / 3811·46 Ni } { 3694·20 Fe / 3694·10 Ni } { 3674·28 Ni / 3674·18 Fe } { 3669·37 Ni. / 3669·30 Fe.

‡‡ Exner and Haschek's numbers: 3664·26, 24·92, 19·52, 12·91, 10·55, 02·42, 3597·87, 71·96, 66·50, 48 36, 24·60, 19·90, 15·15, 14·10, 10·45, 01·00, 3493·15.

§§ Also Manganese.

Also 3666·7, 66·1, 57·7, 56·5, 53·0, 52·6, 51·5, 49·5, 43·7, 43·4, 43·0, 40·1, 39·5, 37·8, 36·5, 32·9, 31·5, 28·0, 26·5, 13·8, 11·9, 07·9, 04·4, 03·9, 3599·6, 92·9, 92·3, 90·5, 89·1, 85·8, 85·4, 84·8, 83·0, 82·3, 81·3, 80·5, 78·0, 76·0, 74·4, 68·0, 61·0, 59·0, 56·9, 56·5, 49·0, 46·7, 45·6, 45·3, 42·1, 39·1, 38·2, 37·6, 37·2, 35·4, 34·2, 31·8, 31·4, 28·4, 26·6, 11·7, 11·4, 07·3, 01·9, 3499·4, 97·6, 91·4, 86·2.—E. and H.

NICKEL—*continued.*

Hasselberg Wave-length (Rowland) Arc Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
‡*3480·36	2		0·97	8·1	28724·6
‡*3479·43	2		”	”	28732·2
‡*3478·48	2	3478·001 Rowland	”	”	28740·1
*3472·68‡‡	7nr	3472·45 L & D.	”	”	28788·1
‡*3469·64	5s	3469·45 ”	”	8·2	28813·2
‡*3467·63	5s	3467·35 ”	”	”	28829·9
‡*3462·95†	2		”	”	28869·0
*3461·78‡‡	8nr	3461·66 ”	”	”	28878·7
*3458·59‡‡	8nr	3458·45 ”	0·96	”	28905·3

SPARK SPECTRUM.

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3458·51	8	3458·3 L. & D.	0·96	8·2	28906·0
3454·2	4	3454·1 ”	”	”	28942
3453·65	5	3453·5 ”	”	”	28946·7
3452·98	7	3452·9 ”	”	”	28952·3
3450·6	2		”	”	28972
3449·5	4		”	”	28982
3449·2	4		”	”	28984
3448·5	2		”	”	28990
3446·34	8	3446·3 ”	”	”	29008·1
3444·4	2		”	”	29025
3444·0	2		”	”	29028
3443·0	2		”	”	29036
3442·6	2	3442·2 ”	”	”	29040
3439·0	2n		”	”	29070
3435·6	2		”	”	29099
3433·71	7	3433·5 ”	”	”	29114·8
3427·8	2		”	8·3	29165
3426·3	2		”	”	29178
3423·80	7	3423·6 ”	”	”	29199·0
3422·8	2		”	”	29208
3422·4	2		”	”	29211
3421·4	4	3421·1 ”	”	”	29220
3420·8	2		”	”	29225
3414·90	8	3414·3 ”	0·95	”	29275·2
3414·0	4	3413·9 ”	”	”	29283
3413·61	5	3413·4 ”	”	”	29285·4
3412·6	2		”	”	29295
3412·1	2n		”	”	29299
3411·1	2n		”	”	29308
3409·5	4	3409·5 ”	”	”	29322
3409·1	4		”	”	29325

‡‡ Exner and Haschek's numbers: 3472·70, 3469·62, 3461·80, 3458·60.
† Probably due to Cobalt.
Also 3485·2, 83·93, 81·2, 78·0, 71·4, 70·2, 65·8.—E. and H.

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3407·43	5	3407·1 L. & D.	0·95	8·3	29339·3
3403·55	5	3403·3 ,,	,,	,,	29372·8
3401·8	2		,,	,,	29388
3401·3	4	3401·0 ,,	,,	,,	29393
3396·3	2		,,	8·4	29436
3393·10	7	3392·9 ,,	,,	,,	29463·2
3391·21	6	3391·9 ,,	,,	,,	29479·6
3385·7	2		,,	,,	29528
3381·03	5		,,	,,	29568·4
3380·70	7	3380·5 ,,	,,	,,	29571·3
3376·4	2		0·94	,,	29609
3374·80	5	3374·5 ,,	,,	,,	29623·0
3374·35	5	3374·1 ,,	,,	,,	29627·9
3374·15	5	3373·8 ,,	,,	,,	29628·7
3372·12	6	3371·8 ,,	,,	,,	29646·5
3369·66	7	3369·4 ,,	,,	,,	29668·2
3367·9	2	3367·7 ,,	,,	,,	29684
3366·9	4		,,	,,	29693
3366·33	6	3366·0 ,,	,,	,,	29697·5
3365·92	6	3365·6 ,,	,,	,,	29701·2
3364·7	2		,,	,,	29712
3364·0	2		,,	,,	29719
3363·8	2		,,	,,	29720
3362·9	2		,,	,,	29728
3361·72	5	3361·5 ,,	,,	,,	29738·3
3359·3	4	3358·6 ,,	,,	8·5	29760
3350·5	4	3350·3 ,,	,,	,,	29838
3345·1	2		,,	,,	29886
3339·1	2n		,,	,,	29940
3336·1	2b		0·93	,,	29967
3327·5	2		,,	,,	30045
3327·0	2		,,	,,	30049
3322·42	6	3322·1 ,,	,,	8·6	30090·0
3320·9	2		,,	,,	30103
3320·38	6	3320·2 ,,	,,	,,	30108·4
3315·80	6	3315·6 ,,	,,	,,	30150·0
3313·1	2	3312·9 ,,	,,	,,	30174
3312·3	4	3312·3 ,, 3412·453 R.	,,	,,	30182
3310·2	2		,,	,,	30201
3309·5	2		,,	,,	30207
3306·9	2		,,	,,	30231
3305·0	2		,,	,,	30248
3302·6	2n		,,	,,	30270
3301·8	2n		,,	,,	30278
3299·2	2b		0·92	,,	30301
3296·3	2		,,	,,	30328
3293·8	2		,,	,,	30351
3290·7	2	3290·6 ,,	,,	,,	30380
3288·5	2b		,,	8·7	30400
3287·1	4		,,	,,	30413
3286·0	2n		,,	,,	30423
3285·1	2		,,	,,	30431
3284·5	2		,,	,,	30437
3282·92	5	3282·7 ,,	,,	,,	30452·0
3281·9	4		,,	,,	30461

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			λ+	$\frac{1}{\lambda}-$	
3280·7	2		0·92	8·7	30472
3276·7	2b		,,	,,	30510
3275·0	2	3274·9 L. & D.	,,	,,	30525
3274·13	6		,,	,,	30533·8
3273·6	2n		,,	,,	30538
3271·28	5	3271·1 ,,	,,	,,	30560·4
3269·0	2		,,	,,	30581
3268·2	2		,,	,,	30589
3261·9	2n		,,	,,	30648
3261·1	2n		,,	,,	30656
3259·0	2n		0·91	,,	30675
3256·1	2		,,	,,	30703
3250·85	6	3250·6 ,,	,,	8·8	30752·4
3249·5	4		,,	,,	30765
3248·55	5	3248·3 ,,	,,	,,	30774·2
3247·72	7		,,	,,	30782·0
3245·5	2n		,,	,,	30803
3243·22	7	3243·1 ,,	,,	,,	30824·8
3242·0	2		,,	,,	30836
3237·1	2		,,	,,	30883
3236·4	2n		,,	,,	30890
3235·8	2		,,	,,	30895
3234·83	6	3234·7 ,,	,,	,,	30904·7
3234·0	2		,,	,,	30912
3233·11	7	3233·1 ,,	,,	,,	30921·2
3231·6	2		,,	,,	30935
3227·2	4	3226·8 ,,	,,	,,	30978
3225·12	6	3225·1 ,,	,,	,,	30997·8
3224·0	2		,,	,,	31008
3223·7	4		,,	,,	31011
3221·75	5	3221·6 ,,	,,	,,	31030·2
3221·37	5		,,	,,	31032·0
3220·2	2		0·90	,,	31045
3220·0	2		,,	,,	31047
3219·5	2		,,	,,	31052
3217·93	7	3217·9, 3217·1	,,	,,	31067·1
3216·9	4	3216·5 L. & D.	,,	,,	31077
3215·7	2n		,,	8·9	31088
3214·15	6	3214·2 ,,	,,	,,	31103·6
3213·5	4		,,	,,	31110
3212·5	2	3212·8 ,,	,,	,,	31119
3210·1	4		,,	,,	31143
3209·1	2		,,	,,	31152
3207·1	2		,,	,,	31172
3205·4	2		,,	,,	31188
3204·7	2		,,	,,	31195
3202·22	5	3202·0 ,,	,,	,,	31219·4
3200·6	4		,,	,,	31235
3199·5	2		,,	,,	31246
3197·20	5	3197·1 ,,	,,	,,	31268·5
3195·7	4	3195·4 ,, 3195·705 R.	,,	,,	31283
3195·4	2		,,	,,	31286
3195·1	2		,,	,,	31289
3192·2	2b		,,	,,	31317
3191·3	2		,,	,,	31326

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	$\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3189·9	2n		0·90	8·9	31340
3187·8	2n		,,	,,	31361
3186·7	2n		,,	,,	31371
3186·3	2		,,	,,	31375
3184·5	4	3184·3 L. & D.	,,	,,	31393
3183·4	2		,,	,,	31404
3183·2	2	3183·1 ,,	,,	,,	31406
3181·9	4	3181·7 ,,	0·89	,,	31419
3179·7	2n	3179·7 ,,	,,	9·0	31441
3179·0	2n		,,	,,	31447
3177·5	2		,,	,,	31462
3177·0	2		,,	,,	31467
3176·4	2		,,	,,	31473
3174·2	2n		,,	,,	31495
3170·8	2		,,	,,	31529
3166·5	2		,,	,,	31572
3165·6	2		,,	,,	31581
3165·0	2		,,	,,	31587
3164·4	2		,,	,,	31593
3159·7	2	3159·4 ,,	,,	,,	31640
3154·8	2		,,	,,	31689
3153·5	2n		,,	,,	31702
3153·0	2		,,	,,	31707
3151·5	2n		,,	,,	31722
3149·5	2		,,	,,	31742
3146·4	2		,,	9·1	31773
3145·8	4	3146·0 ,,	,,	,,	31779
3145·3	2		,,	,,	31784
3134·26	8	3134·5 ,, 3134·223R.	0·88	,,	31896·4
3133·0	2b		,,	,,	31909
3129·5	4		,,	,,	31945
3127·8	2n		,,	,,	31962
3127·3	2n		,,	,,	31967
3121·7	2n		,,	,,	32025
3121·0	2b		,,	,,	32032
3116·8	2		,,	,,	32075
3114·21	6	3114·1 L. & D.	,,	9·2	32101·7
3107·8	2		,,	,,	32168
3105·6	4	3105·5 ,,	,,	,,	32191
3102·00	8	3101·9 ,, 3101·994R.	,,	,,	32228·1
3101·61	8	3101·6 ,, 3101·673R.	0·87	,,	32232·1
3099·19	6	3099·1 L. & D.	,,	,,	32257·5
3097·20	5	3097·1 ,,	,,	,,	32278·0
3094·4	2		,,	,,	32307
3089·9	2		,,	,,	32355
3088·3	2n		,,	,,	32371
3087·12	6	3087·1 ,,	,,	,,	32383·4
3080·82	7	3080·8 ,,	,,	9·3	32449·6
3066·6	2		,,	,,	32600
3064·75	7	3064·7 ,,	,,	,,	32619·8
3064·1	2		,,	,,	32627
3057·72	8	3057·7 ,,	0·86	,,	32694·8
3054·40	7	3054·4 ,,	,,	,,	32730·4
3050·88	8	3050·8 ,,	,,	9·4	32768·0
3047·2	2		,,	,,	32808

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda+$	Reduction to Vacuum $\frac{1}{\lambda}-$	Oscillation Frequency in Vacuo
3045·10	5	3045·0 L. & D.	0·86	9·4	32830·2
3038·05	7	3038·0 ,,	,,	,,	32906·4
3035·5	2		,,	,,	32935
3032·6	2		,,	,,	32966
3032·02	5	3031·9 ,,	,,	,,	32971·9
3031·3	2		,,	,,	32980
3029·5	2		,,	,,	33000
3026·0	2		,,	,,	33038
3024·2	2		,,	9·5	33058
3020·0	2		0·85	,,	33104
3019·28	6	3019·3 ,,	,,	,,	33111·0
3012·10	8	3012·0 ,,	,,	,,	33189·9
3008·2	2		,,	,,	33233
3003·73	8	3003·7 ,, 3003·773R.	,,	,,	33282·4
3002·60	8		,,	,,	33295·0
2992·66	7	2992·6 L. & D.	,,	9·6	33405·5
2991·3	2		,,	,,	33420
2988·1	4	2988·5, 2988·2 L. & D.	,,	,,	33456
2987·3	2		,,	,,	33465
2985·8	2		,,	,,	33482
2985·0	2		,,	,,	33491
2984·20	5	2984·1 L. & D.	,,	,,	33500·2
2983·6	4		,,	,,	33507
2981·76	6	2981·7 ,,	0·84	,,	33527·6
2976·8	2		,,	,,	33583
2973·8	2		,,	,,	33617
2965·5	2b		,,	9·7	33711
2961·5	2		,,	,,	33757
2958·5	2	2958·3 ,,	,,	,,	33791
2955·2	2b	2955·0 ,,	,,	,,	33829
2947·6	4	2947·6 ,,	,,	,,	33916
2944·07	6	2944·0 ,,	,,	9·8	33956·8
2942·9	2		0·83	,,	33970
2934·8	2n	2934·8 ,,	,,	,,	34064
2922·3	2n		,,	,,	34210
2921·3	2b		,,	9·9	34221
2919·2	2b	2919·3 ,,	,,	,,	34246
2917·1	2b		,,	,,	34271
2914·2	2		,,	,,	34305
2913·70	6	2913·7 ,,	,,	,,	34310·7
2912·3	2		,,	,,	34327
2907·6	4	2907·4 ,,	,,	,,	34383
2906·0	2n		,,	,,	34402
2900·3	2n	2901·1 ,,	0·82	,,	34469
2897·2	2n	2899·3 ,,	,,	,,	34506
2892·5	2n		,,	10·0	34562
2891·4	2n	2889·6 ,,	,,	,,	34575
2883·8	2b		,,	,,	34666
2882·5	2b	2882·7 ,,	,,	,,	34682
2881·6	2	2881·4 ,,	,,	,,	34693
2881·3	2n		,,	,,	34697
2873·3	2		,,	,,	34793
2870·0	2		,,	10·1	34833
2868·7	2		,,	,,	34849
2865·5	2	2865·6 ,,	,,	,,	34888

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2864·2	2n		0·81	10·1	34904
2863·90	6	2863·8 L. & D.	„	„	34907·3
2861·6	2b		„	„	34935
2858·2	2		„	„	34977
2857·5	2b		„	„	34986
2855·6	2		„	„	35009
2853·6	2b		„	„	35033
2852·26	4		„	„	35049·8
2851·1	2b		„	„	35064
2849·8	2b		„	„	35080
2846·0	2n		„	10·2	35127
2843·8	2b		„	„	35154
2842·52	5		„	„	35169·8
2840·7	2n		„	„	35193
2839·0	2		„	„	35214
2837·3	2n		„	„	35235
2836·6	2b		„	„	35243
2835·6	2		„	„	35256
2835·2	2b		„	„	35261
2834·6	2		„	„	35268
2832·4	2		„	„	35296
2831·6	2		„	„	35306
2829·2	2		„	„	35336
2825·3	4		„	„	35384
2823·9	2n	2824·4 „	0·80	10·3	35402
2823·3	2		„	„	35410
2821·35	4	2821·3 „	„	„	35433·7
2816·4	2n		„	„	35496
2815·6	2n		„	„	35506
2814·3	2		„	„	35523
2813·3	2n		„	„	35535
2812·3	2n		„	„	35548
2810·3	2b		„	„	35573
2808·3	2	2808·2 „	„	„	35599
2807·6	2n		„	„	35608
2805·7	4	2806·4 „	„	„	35632
2804·8	2	2805·4 „	„	„	35643
2802·76	7		„	„	35668·8
2802·3	2		„	„	35675
2801·2	2		„	„	35689
2800·9	2n		„	„	35693
2798·7	4		„	10·4	35721
2798·3	2		„	„	35726
2798·1	2		„	„	35729
2795·59	7		„	„	35760·2
2794·9	4		„	„	35769
2790·8	2n		„	„	35822
2785·5	2b		„	„	35890
2779·8	2		0·79	„	35964
2775·4	2b	2775·1 „	„	10·5	36021
2771·5	2n		„	„	36072
2770·2	2		„	„	36088
2769·0	2b		„	„	36104
2760·7	2	2760·8 „	„	„	36213
2759·0	2b	2759·1 „	„	„	36235

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2746·8	2		0·79	10·6	36395
2743·1	2		,,	,,	36444
2737·7	2		0·78	,,	36516
2735·5	2		,,	,,	36545
2725·0	2n		,,	10·7	36686
2723·7	2		,,	,,	36704
2722·9	2		,,	,,	36715
2722·4	2		,,	,,	36721
2721·2	2		,,	,,	36737
2711·9	2		,,	,,	36864
2710·7	2		,,	,,	36880
2710·4	2		,,	,,	36884
2708·8	2n	2708·7 L. & D.	,,	,,	36906
2707·7	2		,,	,,	36921
2706·6	2		,,	,,	36936
2705·6	2		,,	,,	36949
2703·1	2		,,	10·8	36984
2700·4	2n	2700·8 ,,	,,	,,	37021
2699·3	2n		,,	,,	37036
2696·6	2		0·77	,,	37073
2695·5	2		,,	,,	37088
2693·2	2		,,	,,	37120
2690·7	2b	2690·6 ,,	,,	,,	37154
2689·8	2		,,	,,	37166
2684·5	4b	2684·4 ,,	,,	,,	37240
2682·4	2b		,,	,,	37269
2680·4	2		,,	,,	37297
2679·2	2b	2679·2 ,,	,,	10·9	37314
2674·8	2	2674·8 ,,	,,	,,	37375
2674·5	2		,,	,,	37379
2673·3	2n	2672·5 ,,	,,	,,	37396
2670·4	2	2670·4 ,,	,,	,,	37437
2666·9	2n		,,	,,	37486
2666·1	2		,,	,,	37497
2665·9	2		,,	,,	37500
2665·3	4	2665·3 ,,	,,	,,	37508
2659·6	2n	2659·9 ,,	,,	,,	37589
2655·9	2n	2656·0 ,,	,,	,,	37641
2655·4	2n		,,	,,	37648
2652·5	2b		0·76	11·0	37689
2650·8	2b	2649·0 ,,	,,	,,	37713
2647·0	2b	2647·2 ,,	,,	,,	37768
2642·0	2b	2643·8 ,,	,,	,,	37839
2641·3	2b	2641·4 ,,	,,	,,	37849
2639·8	2	2639·9 ,,	,,	,,	37871
2639·5	2n		,,	,,	37875
2638·2	2		,,	,,	37894
2637·2	2b	2637·2 ,,	,,	,,	37908
2633·0	2n	2632·8 ,,	,,	,,	37968
2632·5	2n		,,	,,	37976
2631·6	2n		,,	11·1	37989
2631·5	4		,,	,,	37990
2631·2	4		,,	,,	37994
2630·4	4		,,	,,	38006
2629·7	2		,,	,,	38016

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2629·4	2	2628·8 L. & D.	0·76	11·1	38020
2626·5	2b	2626·7 ,,	,,	,,	38062
2623·1	2		,,	,,	38112
2622·1	2		,,	,,	38126
2618·9	2b		,,	,,	38173
2615·3	4b	2615·3 ,,	,,	,,	38226
2613·9	2		,,	,,	38246
2611·7	2		,,	,,	38278
2610·7	2		,,	,,	38293
2610·2	4n	2610·0 ,,	,,	,,	38300
2606·5	4b	2606·5 ,,	0·75	11·2	38355
2605·7	4		,,	,,	38366
2603·9	2		,,	,,	38393
2603·6	2		,,	,,	38397
2602·8	2		,,	,,	38409
2601·2	4b	2601·2 ,,	,,	,,	38433
2599·1	2		,,	,,	38464
2597·7	2		,,	,,	38485
2592·8	2		,,	,,	38557
2589·8	2		,,	,,	38602
2589·6	2		,,	,,	38605
2589·0	2		,,	,,	38614
2588·4	2		,,	11·3	38623
2588·1	2		,,	,,	38627
2587·6	2	2587·1 ,,	,,	,,	38635
2584·1	4	2584·8 ,,	,,	,,	38687
2583·4	2	2583·9 ,,	,,	,,	38698
2578·5	2	2576·1 ,,	,,	,,	38771
2571·0	2n	2572·1 ,,	,,	,,	38884
2569·8	2n	2568·6 ,,	,,	,,	38903
2566·2	4n	2566·1 ,,	,,	11·4	38957
2563·8	2		0·74	,,	38994
2561·6	2		,,	,,	39027
2560·3	2n	2560·2 ,,	,,	,,	39047
2558·7	2		,,	,,	39071
2558·0	2	2557·9 ,,	,,	,,	39082
2556·8	2b		,,	,,	39100
2555·2	2n	2555·1 ,,	,,	,,	39125
2553·0	2b	2553·0 ,,	,,	,,	39159
2551·1	2		,,	,,	39188
2550·7	2		,,	,,	39194
2550·0	2		,,	,,	39205
2549·4	4	2549·5 ,,	,,	,,	39214
2548·8	2		,,	11·5	39223
2547·5	2		,,	,,	39243
2547·3	2		,,	,,	39246
2546·00	7	2545·9 ,,	,,	,,	39265·8
2543·5	2	2543·6 ,,	,,	,,	39305
2541·3	2		,,	,,	39339
2540·8	2		,,	,,	39347
2540·3	2	2539·9 ,,	,,	,,	39354
2539·2	4		,,	,,	39371
2536·1	2		,,	,,	39420
2535·7	2n		,,	,,	39426
2535·3	2n		,,	,,	39432

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2533·6	2		0·74	11·5	39459
2532·2	2		,,	,,	39480
2529·1	2		,,	11·6	39528
2528·1	2		,,	,,	39543
2527·6	2		,,	,,	39551
2524·3	2	2524·5 L. & D.	,,	,,	39603
2522·9	2		,,	,,	39625
2521·7	2		,,	,,	39644
2521·4	2		,,	,,	39649
2521·2	2	2520·4 ,,	,,	,,	39652
2519·3	2n		,,	,,	39682
2518·2	2		,,	,,	39699
2517·9	2		0·73	,,	39704
2516·2	2		,,	,,	39730
2514·7	2n		,,	,,	39754
2510·92	8	2511·0 ,,	,,	11·7	39814·3
2506·8	2		,,	,,	39879
2505·85	5		,,	,,	39897·9
2492·1	2	2597·3 ,,	,,	11·8	40115
2491·2	2		,,	,,	40129
2490·8	2		,,	,,	40136
2490·7	2		,,	,,	40137
2484·3	4n	2584·0 ,,	,,	,,	40241
2483·3	2		,,	,,	40257
2482·7	2n		,,	,,	40267
2482·2	2n		,,	,,	40275
2480·2	2		,,	,,	40307
2479·9	2		,,	,,	40312
2478·6	2		,,	,,	40333
2476·9	2	2577·0 ,,	,,	,,	40361
2473·17	6	2573·2 ,,	,,	11·9	40422·0
2472·1	2	2572·2 ,,	,,	,,	40439
2470·6	2		,,	,,	40464
2466·8	2n		0·72	,,	40526
2465·3	2		,,	,,	40551
2461·9	2		,,	,,	40607
2461·3	2		,,	12·0	40617
2455·5	2	2555·8 ,,	,,	,,	40713
2454·0	2	2554·1 ,,	,,	,,	40738
2452·4	2n		,,	,,	40764
2451·1	2n		,,	,,	40786
2449·1	2		,,	,,	40819
2448·3	2	2548·5 ,,	,,	,,	40833
2445·6	2		,,	,,	40878
2444·6	2		,,	,,	40894
2441·8	2	2541·9 ,,	,,	12·1	40941
2441·7	2		,,	,,	40943
2439·3	2		,,	,,	40983
2439·1	2		,,	,,	40987
2437·92	7	2537·9 ,,	,,	,,	41006·5
2436·7	2		,,	,,	41027
2433·6	4	2533·6 ,,	,,	,,	41079
2432·9	2		,,	,,	41091
2432·6	2		,,	,,	41096
2432·3	2		,,	,,	41101

NICKEL—*continued.*

Exner and Hascheck Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda+$	$\frac{1}{\lambda}-$	
2431·6	2	2431·6 L. & D.	0·72	12·1	41113
2429·2	2		"	"	41154
2428·4	2	2427·2 "	"	"	41167
2425·0	2		"	12·2	41225
2424·1	2		"	"	41240
2423·7	2	2423·8 "	"	"	41247
2423·4	2		"	"	41252
2422·8	2n		"	"	41263
2421·3	2	2421·2 "	0·71	"	41288
2420·8	2		"	"	41297
2419·4	2	2419·4 "	"	"	41321
2417·7	2		"	"	41350
2416·18	7	2416·4 "	"	"	41375·5
2414·1	2		"	"	41411
2413·3	2	2413·2 "	"	"	41425
2413·1	4		"	"	41428
2412·3	2	2412·5 "	"	12·3	41442
2411·6	2		"	"	41454
2410·6	2		"	"	41471
2409·7	2		"	"	41487
2408·8	2		"	"	41502
2408·5	2		"	"	41508
2407·7	2		"	"	41521
2407·3	2		"	"	41528
2406·9	2		"	"	41535
2406·4	2		"	"	41544
2405·2	5	2105·2 "	"	"	41565
2404·2	2		"	"	41582
2403·6	2		"	"	41592
2401·9	2	2402·1, 2400·5 L. & D.	"	"	41622
2398·2	2	2397·6 L. & D.	"	"	41686
2395·8	2	2395·1 "	"	12·4	41728
2394·7	4	2394·7 "	"	"	41747
2394·49	7	2394·4 "	"	"	41750·1
2392·6	4	2393·0 "	"	"	41784
2392·1	2	2392·4 "	"	"	41792
2389·5	2		"	"	41838
2389·3	2	2389·1 "	"	"	41841
2387·7	4	2387·9 "	"	"	41869
2386·7	2	2386·7 "	"	"	41887
2386·6	2		"	"	41889
2386·4	2		"	"	41892
2385·6	2		"	"	41906
2385·0	2		"	"	41917
2384·9	2		"	"	41918
2383·5	4		"	"	41943
2382·0	4	2382·2 "	"	12·5	41970
2379·6	2	2379·0 "	"	"	42012
2378·7	4		"	"	42028
2376·0	2	2376·0 "	"	"	42076
2375·46	6	2375·4 "	"	"	42084·6
2372·2	2	2371·3 "	0·70	"	42143
2369·3	2	2369·9 "	"	"	42195
2368·7	2	2369·3 "	"	12·6	42204
2367·5	4	2367·4 "	"	"	42226

NICKEL—*continued.*

Exner and Haschek Wave length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2366·7	4	2366·5 L. & D.	0·70	12·6	42240
2366·0	2		,,	,,	42252
2365·8	2		,,	,,	42256
2363·9	4		,,	,,	42290
2362·2	2		,,	,,	42320
2360·5	2		,,	,,	42351
2360·2	2		,,	,,	42356
2360·0	2		,,	,,	42360
2359·0	2		,,	,,	42378
2358·8	2	2358·9 ,,	,,	,,	42381
2356·9	2		,,	,,	42414
2356·5	4	2356·3 ,,	,,	,,	42423
2355·0	2		,,	,,	42450
2350·8	2	2350·9 ,,	,,	12·7	42526
2350·0	2	2350·2 ,,	,,	,,	42540
2348·2	2	2348·0 ,,	,,	,,	42573
*2347·5	2		,,	,,	42586
2346·7	2	2346·6 ,,	,,	,,	42600
2345·4	4	2345·4 ,,	,,	,,	42624
2345·3	4	2345·1 ,,	,,	,,	42625
2344·4	2		,,	,,	42642
2344·1	2		,,	,,	42647
2343·6	4	2343·9 ,,	,,	,,	42657
2343·2	2	2343·4 ,,	,,	,,	42664
2343·0	2		,,	,,	42667
2341·2	4	2341·1 ,,	,,	,,	42700
2340·3	2		,,	12·8	42717
2339·7	2		,,	,,	42728
2337·6	2	2337·5 ,,	,,	,,	42766
2337·2	2	2337·0 ,,	,,	,,	42773
2336·7	4	2336·6 ,,	,,	,,	42782
2334·62	5	2334·5 ,,	,,	,,	42820·7
2331·7	2	2330·5 ,,	,,	,,	42874
2330·0	2	2330·0 ,,	,,	,,	42905
2329·8	2		,,	,,	42909
2329·3	2		,,	,,	42918
2327·4	2		,,	12·9	42953
2326·5	4	2326·4 ,,	,,	,,	42970
2325·9	2	2325·9 ,,	0·69	,,	42981
2323·3	2	2323·7 ,,	,,	,,	43029
2323·0	2	2322·7 ,,	,,	,,	43035
2322·8	2	2322·0 ,,	,,	,,	43038
2320·2	4	2321·4 ,,	,,	,,	43087
2319·8	4	2319·7 ,,	,,	,,	43094
2318·6	4	2318·4 ,,	,,	,,	43116
2317·3	2	2317·0 ,,	,,	,,	43141
2316·2	4	2316·0 ,,	,,	,,	43161
2314·1	2	2314·0 ,,	,,	13·0	43200
2313·8	2	2313·8 ,,	,,	,,	43206
2313·0	4	2312·9 ,,	,,	,,	43221
2312·4	4	2312·2 ,,	,,	,,	43232
2311·7	2	2311·6 ,,	,,	,,	43245
2311·0	2	2311·0 ,,	,,	,,	43258

* Double.

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Observations (Rowland)	Reduction to Vacuum $\lambda +$	Reduction to Vacuum $\frac{1}{\lambda} -$	Oscillation Frequency in Vacuo
2308·6	4	2308·5 L. & D.	0·69	13·0	43303
2307·8	4		,,	,,	43318
2305·3	4	2305·2 ,,	,,	,,	43365
2304·7	2		,,	,,	43377
2303·8	4	2303·7 ,,	,,	,,	43394
2303·0	4	2302·9 ,,	,,	,,	43409
2301·5	2	2302·4 ,,	,,	,,	43437
2300·3	4	2300·2 ,,	,,	13·1	43460
2299·8	4	2299·6 ,,	,,	,,	43469
2298·3	4	2298·4 ,,	,,	,,	43497
2297·6	4	2297·5 ,,	,,	,,	43511
2297·2	4	2297·1 ,,	,,	,,	43518
2296·6	4	2296·6 ,,	,,	,,	43530
2292·1	2	2295·7, 2293·1, 2291·1	,,	,,	43615
2290·0	2	2290·0 L. & D. [L. & D.	,,	,,	43655
2289·4	2		,,	,,	43667
2288·7	2		,,	,,	43680
2288·4	2		,,	13·2	43686
2287·7	4	2287·8 ,,	,,	,,	43699
2287·1	4	2287·2, 2285·2, 2284·1 ,,	,,	,,	43710
2281·2	2	2281·0, 2279·6 L. & D.	,,	,,	43824
2278·8	4	2278·8 L. & D.	,,	,,	43870
2278·4	4	2278·2 ,,	,,	,,	43877
2277·3	4	2277·4 ,,	0·68	,,	43899
2276·6	4	2276·7 ,,	,,	,,	43912
2276·2	2	2276·1 ,,	,,	,,	43920
2275·7	4	2275·4 ,,	,,	13·3	43930
2274·8	4	2272·7 ,,	,,	,,	43947
2272·0	2	2271·5 ,,	,,	,,	44001
2271·7	2	2270·7, 2270·3, 2269·5 ,,	,,	,,	44007
2270·2	4		,,	,,	44036
2265·5	2	2266·5, 2265·2 L. & D.	,,	,,	44127
2264·6	4	2264·5 L. & D.	,,	,,	44145
2263·1	2	2263·5, 2263·0 L. & D.	,,	13·4	44174
2260·1	2	2261·5, 2260·7, 2259·7 ,,	,,	,,	44233
2259·4	2n	2259·3 L. & D.	,,	,,	44247
2258·0	2n	2258·0 ,,	,,	,,	44274
2257·0	2		,,	,,	44294
2256·2	4	2256·1, 2255·1 L. & D.	,,	,,	44309
2254·0	4	2254·3, 2253·8 ,,	,,	,,	44353
2253·2	2	2253·0, 2251·8 ,,	,,	,,	44368
2250·7	2	2250·9, 2250·6 ,,	,,	13·5	44417
2249·6	2	2249·6 L. & D.	,,	,,	44439
2247·3	2	2247·8 ,,	,,	,,	44485
2247·1	2	2247·0 ,,	,,	,,	44489
2245·2	2n	2246·3, 2244·8 ,,	,,	,,	44526
2242·7	2	2242·6 L. & D.	,,	,,	44576
2241·7	2	2240·2, 2238·6, &c.	,,	,,	44596
2228·1	2	2227·6, 2227·1 L. & D.	0·67	13·6	44867
2226·5	4	2226·2 L & D.	,,	13·7	44900
2225·0	4	2225·7, 2224·7 ,,	,,	,,	44930
2224·5	2	2224·2 L. & D.	,,	,,	44940
2223·1	2	2222·7, 2222·1 ,,	,,	,,	44968
2221·3	2	2221·7, 2221·0 ,,	,,	,,	45005
2220·5	4	2220·2 L. & D.	,,	,,	45021

NICKEL—*continued.*

Exner and Haschek Wave-length (Rowland) Spark Spectrum	Intensity and Character	Previous Measurements (Rowland)	Reduction to Vacuum		Oscillation Frequency in Vacuo
			$\lambda +$	$\frac{1}{\lambda} -$	
2216·5	4	2219·4, 2217·8, 2216·4,	0·67	13·7	45102
2211·2	2	2211·8 L. & D. [2212·9	,,	13·8	45210
2210·4	4	2210·9, 2210·2 L. & D.	,,	,,	45227
2206·8	2n	2206·5 L. & D.	,,	,,	45300
2205·7	2n	2205·6 ,,	,,	,,	45323
2203·7	2	2203·4 ,,	,,	13·9	45364
2201·4	4	2201·2, 2198·8, 2198·4 ,,	,,	,,	45412
2192·5	2	2198·1, 2197·6, 2191·0 ,,	,,	,,	45596
2188·2	2	2190·4, 2188·6 L. & D.	,,	14·0	45686
2185·6	4	2185·4, 2184·6, 2183·2 ,,	0·66	,,	45740
2180·7	2	2180·2 L. & D.	,,	,,	45843
2179·5	2	2179·7 ,,	,,	14·1	45868
2177·4	2n	2177·0, 2176·3, 2174·7,	,,	,,	45912
2169·3	4	[2174·1 L. & D.	,,	14·2	46084
2161·5	2		0·65	,,	46250
2131·2	2		,,	14·5	46908
2107·8	2		,,	14·7	47428

INDEX INDICIS.

Abbreviations:—Sp., spark-spectrum; Arc, arc-spectrum; Ab., absorption-spectrum; Fl., flame-spectrum; Bd., band-spectrum; L., line-spectrum; Cl, compound-line-spectrum; V., vacuum-tube-spectrum; P., phosphorescent-spectrum. The bound volume of the 'Index' is denoted by A, the appendices by B, C, D, E, F, G, H, I.

Table of corrections for reduction to vacuo, E, p. 51.

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